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Competence and Warmth as a Fundamental Distinction in Social Rejection

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Competence and Warmth as a Fundamental Distinction in Social Rejection

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Chapter 1

Introduction

Humans are social beings. We rely on group membership for our well-being, health, and ultimately for our survival. But we are not always successful in staying within the group. It is safe to assume that no one has ever escaped the occasional feeling of not quite fitting in. For most people this is an unsettling experience. Social scientists have therefore become increasingly interested in the consequences of being socially rejected, and many studies report on the adverse impact of being rejected or ostracized on people's psychological needs, their emotions, their cognitions and their behaviour (Gerber & Wheeler, 2009; Leary, Twenge, & Quinlivan, 2006; Williams, 2007a, 2007b).

In the past 15 years the field of social psychology has acquired many insights in the human response to social rejection. The method of research has been mainly focussed on comparing the impact of a non-specific rejection experience to an inclusion, or non-rejection experience in controlled experimental settings. In the current thesis I adopt a different approach and argue that we should specify and compare different forms of rejection. My main argument is that the experience of being rejected is not a uniform experience, but may vary with the distinct perceptions that people can have about the *reason* of why they are rejected. Afterall, there is no instance of social rejection that occurs without some form of social motivation or social judgment. The act of rejecting or ignoring someone is basically an act of social control to make an individual change the unwanted aspects of his behaviour or personality. Moreover, even when an instance of rejection is not intentional – for example when in a group discussion one of the group members is incidentally ignored more than others – that person may still think that it was intentional and that there was a specific reason. It goes without saying that people are highly responsive to cues of social rejection and to the social motivations that underlie a rejection. I argue that to understand the full range of responses towards social rejection, we need to take into account that rejections have different social motivations, and that people will always impose meaning on a rejection episode.

Until now there has been no research or theorizing within the social rejection literature concerning the potential underlying social motivations that drive people to reject others. Based on literature and research from the field of person perception and group processes (Fiske, Cuddy, & Glick, 2007; Levine & Kerr, 2007), I differentiate between rejections motivated by a perception of lack of warmth in the target, and rejections motivated by a perception of lack of competence in the target. That is, people can be rejected because they behaved in ways that betrayed others' trust in them, or they can be rejected because they are not competent enough. The goal of the present thesis is to demonstrate that rejected individuals indeed differentiate between these two forms of rejection and that the reason of

the rejection matters for subsequent outcomes.

In the remainder of this introduction I first provide an overview on social rejection research and I discuss several existing research topics and theoretical models. Next, I follow up with a short review on the literature regarding the distinction between warmth and competence evaluations in person perception. I conclude this introduction with describing my approach to investigating the warmth-competence distinction in relation to social rejection, and provide an overview of my studies.

Social rejection in the literature

Research shows that the experience of rejection – being excluded or ignored – is an exceptionally painful social experience. Studies show that rejection elicits an immediate and unmitigated social pain response. There are studies suggesting that humans respond to rejection with some of the same neuronal networks in the brain that respond to physical pain (Eisenberger & Lieberman, 2004; Eisenberger, Lieberman, & Williams, 2003; McDonald & Leary, 2005). From a functionalist perspective, the social pain is thought to have evolved because of the high survival value of group membership. In line with this idea, many studies suggest that the social pain of rejection is not easily mitigated by social factors (Gonsalkorale & Williams, 2007; Van Beest, Carter-Sowell, Van Dijk, & Williams, 2012; Lelieveld, Moor, Crone, Karremans, & Van Beest, 2013; Van Beest & Williams, 2006; Williams, Cheung, & Choi, 2000). Other studies showed that the shock of rejection can even lead to physical and emotional numbness (Blackhart, Nelson, Knowles, & Baumeister, 2009; Gerber & Wheeler, 2009; Baumeister, DeWall, & Vohs, 2009). Finally, other studies suggests that social rejection impairs self-regulation and cognitive functioning (Baumeister, Twenge, & Nuss, 2002; Baumeister, DeWall, Ciarocco, & Twenge, 2005; Twenge, Catanese, & Baumeister, 2002). Because of these adverse outcomes of rejection, after a recent rejection experience, people are often motivated to strengthen their connections with others, or engage in new connections – more so than people who have not recently experienced a rejection. This motivation seems in part automatic. For example, compared to non-rejected individuals, recently rejected individuals engage in more social mimicry and demonstrate heightened sensitivity to cues of social acceptance (Pickett, Gardner, & Knowles, 2004; Lakin, Chartrand, & Arkin, 2008; Maner, DeWall, Baumeister, & Schaller, 2007; Ouwerkerk, Kerr, Gallucci, & Van Lange, 2005; Williams & Sommer, 1997; Williams et al., 2000). But social rejection can also elicit antisocial behaviour, especially when it is a disproportionate threat to personal control (Twenge, Baumeister, Tice, & Stucke, 2001; Twenge, Baumeister, DeWall, Cia-

rocco, & Bartels, 2007; Warburton, Williams, & Cairns, 2006).

Importantly, in a majority of social rejection studies participants do not obtain a reason for the rejection. This means that we do not know how the perceived reason of the rejection might have impacted the responses to rejection in these studies. Most paradigms use a technique in which participants are rejected out of the blue without a seeming reason, and participants are also not asked about their subjective construals of why they thought they were rejected. For example, in many studies participants are led to believe that no one wants to continue interacting with them after initial contact or information exchange (The get-acquainted paradigm; Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997), or that they will lead a lonely life without friends (The life- alone-prognosis paradigm; Baumeister et al., 2002). Another technique is ignoring the participant in a joint activity, for example a group conversation (Zadro, Williams, & Richardson, 2005), or in a real or digital game of ball toss ("Cyberball"; Williams & Jarvis, 2006). These techniques are not designed to differentiate between different reasons for rejection; they aim to compare the impact of rejection with non-rejection, or inclusion. In the same vein, existing theoretical models distinguish between different styles of rejection (fairness, expectedness or severity), different implications of rejection (costs of the rejection, threatened psychological needs), or differences in characteristics of the source and context of the rejection, but they do not elaborate on possible social motives behind rejections.

For example, the notion of the *Implicit social bargain* (Baumeister et al., 2005) proposes that group membership motivates individuals to behave in socially appropriate and non-selfish ways. Baumeister et al. (2005) propose that human social life contains an implicit bargain between the individual and his or her social environment. This bargain holds that in order to be accepted by others, individuals need to regulate their selfish needs and impulses, such as for example stealing a colleague's iPad, listening to loud music in the middle of the night, or not respecting others' opinions. Normally, people are willing to sacrifice their selfish needs because belonging to a group has psychological and practical benefits. However, if the group does not adhere to the bargain and does not provide in the individual's needs, or chooses to reject the individual, the individual will feel no need any more to self-regulate and behave in antisocial ways. For example, the life-alone paradigm (Twenge et al., 2001, 2007) and the get-acquainted paradigm (Nezlek et al., 1997; Twenge et al., 2001) seem to elicit more aggression than the often used Cyberball paradigm (Williams & Jarvis, 2006). It could be that the former manipulations are experienced as an especially rough breach of the social contract. The implicit bargain explanation however, does not elaborate on what the reasons

might be for a breach of the social contract.

The *Multi-motive model* by Richman and Leary (2009) explains why rejection leads to a variety of behaviours, ranging from social withdrawal, to antisocial and prosocial behaviour. Different from the implicit bargain model, the multi-motive model specifies parameters in the social environment, and describes the source and the implications of the rejection as predictors of different responses to a rejection. More specifically, the multi-motive model differentiates between the perceived costs of the rejection, the feasibility of restoring acceptance, the importance of the relationship, the possibility of alternate relationships, the pervasiveness of the rejection and the (un)fairness of the rejection. The model predicts that prosocial responses are prevalent when the relationship is seen as valuable, when rejection is costly, and when repair of the relationship is feasible; antisocial responses are prevalent when the relationship is of low value, the cost of rejection is low, the rejection is perceived as unfair, and when repair of the relationship is unfeasible. Finally, social withdrawal is thought to be the result of pervasive rejection that ultimately leads to feelings of helplessness and depression. For example, a study reported by Lawson and Williams (1998) showed that being rejected by a friendship pair in a face-to-face ball-tossing game caused participants to behave more antisocially over a newly arriving naive participant, than being rejected by two individuals who were strangers to each other. Possibly, being rejected by a friendship pair or close knit group is a greater sign of unfeasibility of obtaining inclusion, which causes antisocial behaviour. The multi-motive model indirectly implies that rejections can have different social reasons, but it does not elaborate on what these reasons could be.

Finally, the *Needs threat model* by Williams (1997, 2001) differentiates between rejections that thwart belongingness needs and rejections that thwart control needs. The model proposes that rejected individuals feel and act in accordance with the psychological needs that are mostly threatened. According to this model rejection threatens four basic psychological needs: belongingness, self-esteem, control and meaningful existence. The *Need fortification hypothesis* then states that after a rejection people are motivated to fortify the most saliently threatened need(s). The hypothesis then distinguishes between an inclusionary need cluster, and a power and control need cluster. The inclusionary need cluster consists of the need to belong and the need for self-esteem, with self-esteem being considered as a socio-meter of social inclusion (Leary, Tambor, Terdal, & Downs, 1995). When belongingness needs are threatened, thoughts, feelings, perceptions and behaviour arise that are directed at increasing the likelihood that the individual feels connected again. According to Williams (2007a, 2007b), the need for control can be

a priority above belongingness and self-esteem needs when the individual sees no chance for inclusion. When this happens, people are more motivated to overpower others and force them to recognize their existence. Thus, when rejection threatens control to an overly large extent people are more likely to behave aggressively rather than prosocially. The role of control threat was demonstrated in a study conducted by Warburton et al. (2006). In their study participants were either excluded or not excluded in a game of face-to-face ball-tossing in the waiting room. Then, 'the actual' experiment began in which participants had to listen to a series of loud blasts of sound. Half of the participants were given control over the onset of the blasts of noise, whereas the other half was subjected to a random uncontrollable sequence of noise. In the next phase of the experiment, participants' level of aggression was assessed by measuring the amount of the hot-sauce (Lieberman, Solomon, Greenberg, & McGregor, 1999) that participants allocated to another individual. The results of this study supported the control (via aggression) fortification hypothesis; participants who were excluded in the game and later deprived of control over the onset of each blast of noise, displayed higher levels of aggression, than participants who were excluded and then given control over the noise sequence. The latter group of participants had aggression levels similar to included participants. Williams (2007a, 2007b) argues that when reconnection is possible and when the rejection does not pose an extreme threat to personal control, the default response toward rejection is restoring belongingness. Only when reconnection is deemed impossible, individuals will revert to aggression as an ultimate attempt to restore the only thing that is left, control. The needs threat model however does not elaborate on the reasons why sometimes rejections are a threat to control, and whether different reasons might evoke different a different response.

In sum, the theoretical models described above do not take into account the social motivations that often precede rejections in daily life. Taking into account that rejections have different reasons could give a more differentiated perspective on how specific responses to rejection emerge. In the present thesis I investigate the role of perceptions of low competence and low warmth as motivators of social rejection. Differentiating between competence and warmth could be relevant for social rejection research for two reasons. First, because being perceived as competent and warm by others is important for humans to feel an optimal sense of belongingness and acceptance. Second, because competence and warmth are basic requirements for any cooperative social bond, and people who are negatively evaluated on either dimension are more likely to get rejected (Levine & Kerr, 2007).

Competence and warmth in the service of belongingness

The need for belongingness has been described in the literature as one of the driving forces of human behavior. It is one of our core needs (Baumeister & Leary, 1995), and perhaps even the most important one, seeing its connection with group living which promotes physical survival, access to food (Rofe, 1984), and opportunities for sexual reproduction (Ainsworth, 1989; Axelrod & Hamilton, 1981; Bowlby, 1969; Buss, 1990, 1991; Moreland, 1987). Yet, for an optimal sense of belonging merely being part of a group is not enough. All the more, because physical survival normally is a relatively distal goal. People have more proximate social psychological needs as well, that when thwarted, alert the individual to check the quality of their social relationships (Leary et al., 1995; Kenrick, Griskevicius, Neuberg, & Schaller, 2010). We can easily imagine ourselves being part of a social group, yet at the same time not feeling entirely accepted – for example because we feel not trusted, liked or loved, or because we feel not valued for our abilities and skills. In the same manner, groups and individuals can criticize, reject or ostracize individuals who are seen as untrustable (i.e. as having hostile intentions) or incompetent. This shows that the experience of belongingness and rejection is a multifaceted phenomenon.

Sifting through the literature I found that trust, warmth and competence are frequently described psychological needs within social relationships. For example, Maslow (1943, 1970) writes about the need for affiliation, status and mastery; Deci and Ryan (1985, 2008) write about the need for relatedness, competence and autonomy and, within the social rejection literature, Williams (2007a, 2007b) writes about the needs for belongingness, meaningful existence, self-esteem and control. The needs for affiliation, relatedness, belongingness and meaningful existence seem to refer to the need for being valued for one's companionship and warmth, whereas the needs for status, competence, autonomy, mastery, and control seem to refer to the need for being valued for one's skills and competences. In other words, individuals desire to be loved, liked and trusted for their friendly and caring side, but they also want to be respected for their intellectual and practical (i.e. problem solving, leadership) abilities. That people have these needs is perhaps most evident from the typical questions that they ask themselves (and others) when they feel rejected: "Do they not like me?" or "Am I not good enough?"

In the past, several theoretical models (Asch, 1997; Bales, 1970; Leary, 1957) have proposed that personality, interpersonal relations and person perception can be described along two primary dimensions: dominance and affiliation. According to Leary's *Interpersonal circumplex model* (Leary, 1957) relationships between

people consist of vertical and horizontal elements. In this model the vertical axe ranges from submissiveness on one pole, to dominance on the other pole, and the horizontal axe ranges from hate on one pole, to love on the other pole.

Brewer's *Optimal distinctiveness theory* (Brewer, 1993) suggests a similar distinction and proposes that people have competing needs for assimilation and differentiation; that is, people have respectively the need for feeling included and accepted by members of one's group, but also for feeling distinctive from members of one's group. One could contend that the strive for assimilation is horizontal in nature and consists of behaviours that are aimed at attaining love, liking and trust from others, whereas the strive for differentiation is vertical in nature and consists of behaviours aimed at attaining status, respect and acknowledgement for one's competencies.

Similarly, the *Dual pathway model of interpersonal acceptance* (Huo, Binning, & Molina, 2010) posits that gaining interpersonal value within social groups is specifically obtained by seeking liking and status (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006; Frank, 1985). The model describes the need for liking as resulting from the individuals' perception of the degree to which the group feels warmly to them. The need for status, on the other hand, is described as resulting from the individual's perception of his or her reputational self within the group (i.e. the degree to which others respect the individual) (Tyler & Smith, 1999). According to this model both liking and respect ensure one a place in the group.

Finally, the *Stereotype content model* by Cuddy, Fiske, and Glick (2008) proposes similar ideas. According to the stereotype content model humans evaluate each other on two primary characteristics: warmth and competence. According to the model warmth and competence are core and universal components of interpersonal perception (Fiske et al., 2007). When people evaluate individuals on competence they rely on characteristics such as skill, creativity, intelligence, foresight and competitiveness, whereas when they evaluate individuals on warmth they rely on characteristics such as friendliness, sincerity, helpfulness, trustworthiness and cooperativeness. Thus an individual who is evaluated high on the warmth (horizontal) dimension will attain love and trust, whereas an individual that is evaluated high on the competence (vertical dimension) will attain respect and status.

From the above I infer that humans can experience two distinct types of rejection: rejection based on a lack of warmth, which is essentially a withdrawal of love and trust, and rejection based on a lack of competence, which is essentially a withdrawal of respect.

Approach

The aim of this dissertation is to show that the distinction between these two types of rejection is warranted. More specifically, I aim to show that targets of a rejection recognize warmth and competence rejections as different types of rejection and respond to them in distinct ways. In most of my studies I mainly rely on emotional responses as dependent variables. This is because I view emotions as facilitators of appropriate responding in social interactions. Tooby and Cosmides (2008) for example, argue that emotions help coordinate an individual's behaviour and responses in social situations. Research among primates highlights the importance of emotions in guiding physiological, motivational and cognitive systems that together increase the chances for survival. According to the *Social brain hypothesis* primates and humans have evolved a large neocortex and specific areas in the brain that facilitate emotion communication and recognition in order to cope with complex group living (Parr, Waller, & Fugate, 2005). Because of the specific social functions of emotions, I argue that if competence and warmth rejections are indeed distinct forms of rejection, they should lead to distinct socially adaptive emotional reactions. A warmth rejection after all, conveys a different social message, and therefore requires different coping, than a competence rejection. Warmth and competence rejections should therefore elicit different emotional responses.

In social rejection literature emotions are commonly viewed as a pain signal. At the same time there is also some debate as to whether social rejection leads to lowered mood or not. Although some studies find that rejection indeed leads to negative emotions like hurt feelings, anger and sadness (Buckley, Winkel, & Leary, 2004; Williams et al., 2000, 2002), other researchers have not found such an effect (DeWall & Baumeister, 2006; Twenge et al., 2007; Twenge, Catanese, & Baumeister, 2003). There is also the question whether emotions play at all a role in the link between rejection and behavioural reactions. Many studies suggest that behavioural responses to rejection do not follow from the emotional reactions to the rejection (Buckley et al., 2004; Twenge et al., 2001, 2002, 2003). A study conducted by Chow, Tiedens, and Govan (2008), on the other hand, showed that antisocial responses following an episode of rejection in an online ball-tossing game were predicted by anger, but not by sadness.

The approach in the current thesis somewhat diverges from the above literature. Although I agree that we can infer from the intensity of emotions how much a rejection hurts, and that sometimes being rejected can hurt so much that it may actually lead to emotional numbness (Blackhart et al., 2009), I approach the function of emotions as first and foremost social in nature – emotions ready the

individual for social action and elicit social behaviours from others (Frijda, 1987). In my studies I focus on the emotions of sadness and anger because they are the most commonly reported emotions in response to social rejection (Buckley et al., 2004; Chow et al., 2008; Gerber & Wheeler, 2009). I argue that by examining the emergence of these emotions more closely we can learn more about the complex nature of social rejection.

Overview of studies

In the first three empirical chapters I investigate whether depending on individual differences in personality and the reason of the rejection – warmth or competence – people show distinct emotional responses to rejection that make sense from a functional perspective. In the last empirical chapter the focus is not on demonstrating the competence-warmth distinction anymore, but on dysfunctional responses to rejection among individuals diagnosed with anti-social personality disorder. These individuals are interesting in relation to the warmth-competence distinction as they represent a group that is especially low in warmth and affiliation needs.

Chapter 2. Because I aimed to rely on sadness and anger to demonstrate that people experience competence and warmth as two distinct forms of rejection, I first wanted to test whether these emotions are indeed differentially impacted by rejection. In the social rejection literature sad and angry responses to rejection are usually not distinguished from each other, and are often put under the common denominator of negative and unpleasant emotions. In this chapter I investigated whether the same unspecific rejection manipulation (i.e. without a given reason) can cause different levels of sadness and anger, depending on individual differences in need for affiliation, as measured with sensitivity to others in intersonal relationships. More specifically, I hypothesized that individuals with a high sensitivity to others would suppress their anger, and mainly respond with sadness to a rejection, while individuals with a low sensitivity to others would mainly respond with anger to a rejection.

Chapter 3. In the next chapter I investigated how subjective interpretations of ambiguous warmth and competence reasons, and actual warmth and competence reasons impacted sadness and anger in response to rejection. I inferred targets' subjective interpretations of the reason for the rejection from their memory for ambiguous feedback that they received from their ostensible rejecter. Then, in the next two experiments I manipulated the reason of the rejection; first, by provid-

ing participants with unambiguous negative feedback about their competence or warmth, and second by using a recall technique. I hypothesized that (interpretations of) competence rejections, would mainly elicit anger and less sadness, while (interpretations of) warmth rejections would mainly elicit sadness and less anger.

Chapter 4. In this chapter I focussed on the non-verbal expressions of competence and warmth appraisals that precede a rejection. I reasoned that because conveying and understanding the reason of the rejection is important, subjective appraisals of lack of competence (or lack of warmth) should seep through the non-verbal behavior of the person who engages in the rejection, and rejected individuals should be especially sensitive to pick this up. In two experiments I attempted to simulate real life in which people often have their private reasons for ignoring or rejecting someone, and targets have no information other than the non-verbal behaviour of the person who engages in the rejection. In a face-to-face selection situation, selectors (who were real participants) were privately instructed to make a selection among a group of individuals either based on their subjective evaluation of their competence, or on their subjective evaluation of their warmth. I expected that the instruction to select on competence, compared to the instruction to select on warmth, would lead to stronger non-verbal expressions of dominance in the selectors, whereas the instruction to select on warmth, compared to the instruction to select on dominance, would lead to stronger non-verbal expressions of coldness. Moreover, I expected that rejected targets, compared to included targets, would be especially sensitive in picking up dominance and coldness in the selectors. In addition, I investigated whether the same emotional response patterns as in Chapter 3 would arise among rejected individuals – even when the reason of the rejection is not verbalized and only clear to the selector.

Chapter 5. In the final empirical chapter, I investigated reactions to social rejection among an extreme group of individuals: violent offenders diagnosed with anti-social personality disorder (ASPD). The characteristics of this disorder suggest that these individuals might be especially controlling in their need to be respected as a competent individual. Using a ball tossing game (Cyberball) I investigated how giving these individuals the opportunity to exert social control over the other players in the game might impact their reaction to being excluded in the game, and compared this to individuals from a normal population without a known history of violence, or diagnosis of ASPD. I expected that, because of their sensitivity for control, a relatively short opportunity to exert social control would serve as a buffer against the impact of ostracism for individuals diagnosed

with ASPD, and that this would consequently weaken their normal response to ostracism, compared to the response of a normal population.

After these empirical chapters, *Chapter 6* contains a general conclusion and discussion. In it, I discuss the implications of the findings in this thesis for existing theory. A summary of the empirical findings can be found in the Summary and Samenvatting (Dutch version) sections of this thesis.

Conclusion

This dissertation introduces a new framework for social rejection that distinguishes between the different social motivations underlying social rejection. I report on several studies that are designed to show distinct emotional reactions to warmth and competence rejection. This framework will hopefully pave the way for a new line of research in the field of social rejection in which the subjective experience of rejection, the act of rejection, and their interactions are more closely inspected in light of basic social motives. Note that some empirical chapters are based on individual research papers and as such can be read independently from each other. This also means that there will be some overlap between the different chapters.

Chapter 2

Individual differences in emotional responses to social rejection

This chapter investigates rejected and not rejected individuals' anticipated emotional responses to hypothetical threatening social scenarios. In the social rejection literature anger and sadness are commonly considered emotions that signal social pain. In the present chapter I argue that considering these emotions' distinct social functions they need not always be elicited with the same intensity in response to a rejection. We hypothesized that after a rejection experience, participants who are more sensitive to others would anticipate higher feelings of sadness and lower feelings of anger in response to subsequent social threat. For participants who are less sensitive to others we hypothesized that they would primarily enhance their anger response. The results showed that, as expected, rejected participants with a high sensitivity to others anticipated less anger and more sadness in response to social threat scenarios, compared to their non-rejected counterparts, and compared to rejected participants with a low sensitivity to others. Participants with a low sensitivity to others anticipated equal levels of anger and sadness, regardless of whether they were rejected or not.

This chapter is adapted from:

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Introduction

In the literature anger and sadness are the most commonly named emotions that constitute the concept of social pain in response to rejection (Chow et al., 2008; Richman & Leary, 2009; Van Beest & Williams, 2006; Van Beest, Williams, & Van Dijk, 2011; Gerber & Wheeler, 2009). To our knowledge there are no prior studies that investigated the nature and function of these emotions in response to a rejection. In most studies, anger and sadness are merely considered as expressions of social pain. But if they are just pain signals, why do people distinguish between anger and sadness? In some people the primary response to being rejected seems mostly sadness, while in others it seems mostly anger. In the present chapter we argue that anger and sadness are not only pain signals, but also functional emotions that individuals habitually deploy to regain inclusion. As a first step in showing the feasibility of our idea, we investigate whether it is possible to differentiate between people who primarily respond with sadness, and people who primarily respond with anger to rejection.

Anger and sadness in response to rejection

Sadness and anger are often placed under the common denominator of negative and unpleasant emotions. Yet, from a functional perspective they are quite different from each other, each with different antecedents and behavioral consequences (Ekman, 1992; Frijda, 1987; Frijda, Kuipers, & Schure, 1989; Keltner & Gross, 1999; Van Kleef, De Dreu, & Manstead, 2010; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008). Sadness primarily signals helplessness, elicits nurturance from others, and motivates the individual to actively reach out to others (Gray, Ishii, & Ambady, 2011; Shaver, Schwartz, Kirson, & O'Connor, 2001; Vingerhoets, Cornelius, Van Heck, & Becht, 2000). Anger on the other hand, signals dominance and toughness, causing others to concede more quickly (Knutson, 1996; Sinaceur & Tiedens, 2006; Van Beest, Van Kleef, & Van Dijk, 2008). Anger is an energizing emotion that motivates the individual to reassert power and status through competition, or frightening others into compliance (Kassinove, Roth, Owens, & Fuller, 2002; Keltner & Haidt, 1999; Lelieveld, Van Dijk, Van Beest, & Van Kleef, 2012; Shaver et al., 2001; Van Kleef, 2010). Moreover, people expressing anger are often perceived as being of higher status than people expressing sadness (Tiedens, Ellsworth, & Mesquita, 2000). Stated differently, these emotions distinguish between the 'horizontal' and 'vertical' aspects of relationships. Sadness is an emotion that is typically part of a horizontal managing of interpersonal relationships. Within relationships sadness – compared to anger – is more functional in achiev-

ing a feeling of mutual trust (i.e. a mutual understanding of friendly intentions), warmth and affiliation. Anger on the other hand, is typically part of a vertical managing of interpersonal relationships. More than sadness, anger is especially functional in achieving status (and if possible respect) through competition or even force. Recently, Huo et al. (2010) have argued that to obtain interpersonal acceptance within social groups people seek liking and status.

The idea that sadness and anger are two distinct strategies in managing social relationships, suggests that these emotions might also be crucial in dealing with social rejection. Indeed, sadness and anger are the two most commonly reported emotions in the social rejection literature (Chow et al., 2008; Gerber & Wheeler, 2009; Richman & Leary, 2009; Van Beest & Williams, 2006; Van Beest et al., 2011). Considering the functional characteristics of anger and sadness, we propose that the intensity of these emotions in response to rejection should be related to the extent that individuals value and need trust and liking in their relationships with others. In support of our idea, the commonly reported prosocial and aggressive pathways in response to rejection (Williams, 2007a, 2007b), appear to be linked to anger and sadness. More specifically, the anger instigated by social rejection appears to be linked to aggression (Chow et al., 2008), while sadness instigated by social loss appears to be linked to increased attention to nonverbal cues and the desire for social connectedness (Gray et al., 2011),

In sum, the main idea put forward in this chapter is that – assuming after a rejection people desire reinclusion – to the extent that people differ in how much they need mutual trust and liking in their relationships (i.e. affiliation), some will be more likely to show sadness in response to a rejection, while others will be more likely to show anger in response to the same rejection. Our underlying idea is that being liked and trusted, is easier to obtain with sadness, because sadness shows others one's warmth, and elicits caring and nurturance. But when one is less concerned with being liked or trusted, one may go for the quicker route, which is to express anger in an attempt to intimidate others into recognizing one's existence.

Present study and hypotheses

Following this reasoning the occurrence of anger and sadness in response to rejection should be predicted by individual differences in managing interpersonal relationships, more specifically by individual differences in the need for affiliation. We assessed participants' need for affiliation with the Sensitivity to others (SO) subscale of the autonomy-connectedness scale (ACS; Bekker & Van Assen, 2006). SO is defined as the sensitivity to the opinions, wishes, and needs of other peo-

ple, and the need for intimacy and affiliation with others. Recent studies suggest that specifically SO as an individual difference variable is related to internalizing emotional response patterns; response patterns in which sadness predominates and anger is suppressed. Additionally, we also administered the attachment style questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994). The attachment style questionnaire measures the level of insecure (avoidant and fearful) attachment. We consider insecure attachment as a form of sensitivity to others too, characterized by conflicting affiliation needs and an unhealthy preoccupation with, or detachment from others. We added this measure for exploratory reasons and had no a priori hypotheses.

We reason that the higher an individual's sensitivity to others, the more he or she should desire mutual trust, liking and affiliation; hence we expect heightened sadness and lowered anger in response to being rejected. For individuals with a lower sensitivity to others, we reason that their desire for mutual trust, liking and affiliation is lower; hence we expect only heightened anger in response to rejection, and no effect on sadness.

Experiment 1

We used a paradigm in which participants were rejected or not, and following this experience we asked them to anticipate how sad and angry they would feel in ambiguously threatening hypothetical social situations. We reasoned that especially in situations that are ambiguous, habitual response styles should dominate behaviour the most. Note that we did not measure participants' emotional reactions in response to the rejection experience itself, as we aimed to show that people deploy anger and sadness as coping strategies *after* they have been rejected, in response to new threatening situations.

We expected that compared to a control condition, after a rejection experience, individuals with a high sensitivity to others would anticipate higher sadness and lower anger, while individuals with a low sensitivity to others would anticipate mostly higher anger (not higher sadness). In parallel, we expected that among rejected participants sensitivity to others would be positively associated with sadness, and negatively associated with anger. Among non-rejected participants we expected a weaker relationship between sensitivity to others and emotional response.

Method

Participants and design

One hundred-thirteen subjects (76 female; M_{age}= 20.27, SD_{age}= 3.44) participated for course credit. All participants were first year students at the psychology department at Tilburg University, except for three who were 3rd year students. Participants were randomply assigned to a rejection or a non-rejection control condition.

Measures

We measured participants' need for affiliation with the Sensitivity to others (SO) subscale of the autonomy-connectedness scale (ACS; Bekker & Van Assen, 2006) and with the Attachment Style Questionnaire (ASQ; Feeney et al., 1994). The SO subscale consists of 15 items rated a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Examples are "I hate detachment"; "Usually I can dismiss another person's misery from my mind" (reverse coded) (α=.81). The ASQ consists of 5 subscales (1 measuring secure attachment, and 4 measuring different aspects of insecure attachment), with items rated on a 6-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (6). Examples of the subscales are "I am confident that others will always be there for me" (Confidence in self and others; 4 items, α= .57), "I sometimes wonder why others would want to get to know me" (Need for approval; 6 items, α= .72), "I am worried that others care less about me than I care about them" (Preoccupation with relationships; 5 items, α= .40), "I have mixed feelings about close relationships with others" (Discomfort with closeness; 9 items, α= .73), "For me achieving things is more important than having relationships with people" (Relationships as secondary; 6 items, α= .63).

Procedure

Participants were led to individual cubicles were they filled in the questionnaires[1] on a laptop. They were told that afterwards they would meet another student for an interview. In reality there was no other student. Ostensibly to prepare participants for the interview they were asked to write a short description about

[1] Next to SO and attachment style we also measured self-awareness & capacity to manage with new situations (the two other subscales of the ACS-30), depression (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), self-expression and self-control (SECS; Van Elderen, Maes, Komproe, & Van Der Kamp, 1997), personality organisation (IPO; Lenzenweger, Clarkin, Kernberg, & Foelsch, 2001), anti-social personality (VKP; Duijsens, Eurelings-Bontekoe, & Diekstra, 1996), the big-five personality dimensions (NEO-FFI; Costa & McCrae, 1992) and sex-role (BSRI; Bem, 1974). Controlling for these measures in our analyses did not alter the main results.

themselves, which the experimenter would deliver to the 'other student'. After writing for 5 minutes, participants received a fake description from their future conversation partner. After participants read this description, which contained neutral and general information, the experimenter told the participants that contrary to what they had heard earlier, they would not meet the student. Crucially, the reason why this was the case depended on experimental condition. Specifically, in the rejection condition they were told that the other participant changed his mind and did not want to meet the participant anymore, while in the control condition they were told that the other participant had to leave unexpectedly because of a phone call, and had apologized for not being able to do the interview (for a similar procedure see, Nezlek et al., 1997).

In both conditions the experimenter apologized for the inconvenience and asked whether the participant was willing to take part in another study. All participants agreed to continue with this next study. In fact this other study was our dependent measure. The dependent measure consisted of questions regarding 8 different scenarios of ambiguously negative social situations. These scenarios are derived from the hostile attribution bias scale (HABS; Lakey, Kernis, Heppner, & Davis, 2011). This is a self-report measure to assess individuals' tendencies to exhibit the hostile attribution bias in response to descriptions of ambiguous social provocations. The original measure consists of 14 short vignettes. We made a shortened adaptation of the HABS consisting of 8 scenarios. An example of a scenario is the following:

> It's Saturday afternoon and your neighbour is listening to his radio. The volume is very loud and you are bothered by this a lot. When you ask your neighbour to turn down the volume, he says: "Yeah, I'll do it in a minute!", but in the end he does not do it.

We assessed anticipated sadness with the items "sad" and "insecure" and anticipated anger with the items "angry" and "annoyed". Participants were asked to read each scenario (presented on a laptop screen) and indicate the likelihood that they would feel these emotions in on a 7-point Likert scale ranging from *not at all* (1) to *very much* (7). Within each scenario the two measures of each emotion had a good correlation. Pearson's correlations between the items "sad" and "insecure" ranged between .32 and .80, (all p's$< .001$), and correlations between the items "angry" and "annoyed" ranged between .40 and .79 (all p's$< .001$). We therefore averaged the items sad/ insecure and the items angry/annoyed for each scenario. Next, we conducted reliability analyses for sadness across the whole set of scenario's and one for anger across the whole set of scenario's. These analyses showed that across the whole set of scenarios both emotions have excellent reli-

ability with Cronbach's α's of .86 (sadness) and .97 (anger). This allowed us to compute an average variable of sadness and an average variable of anger across the whole set of scenario's.

Finally, participants were thanked and debriefed about the real purpose of the study.

Results

Table 2.1 shows all relevant correlations. It appeared that female participants reported higher sensitivity to others (SO), need for approval and anticipated sadness, than male participants. Furthermore, SO was negatively related to relationships as secondary and positively related to preoccupation with relationships, need for approval, and both anticipated sadness and anger. Anticipated sadness and anger in turn were both positively related to need for approval and preoccupation with relationships, while only sadness was negatively related to confidence. Finally, both emotions were positively related to each other.

We conducted two sets of regression analyses, one with sadness as the dependent variable and one with anger as the dependent variable. In both analyses predictors were Condition (dummy coded: rejection= 0.5; control= -0.5), Sex (dummy coded: female= 0.5; male= -0.5), all personality variables (Sensitivity to others, Confidence, Need for approval, Preoccupation with relationships, Discomfort with closeness, and Relationships as secondary) and the two-way interaction terms between condition and each of the personality variables. We controlled for sex because it was correlated with sensitivity to others and anticipated sadness. Finally, because of the high correlation between anticipated sadness and anger, we controlled for anticipated sadness in the analyses with anticipated anger as the dependent variable, and vice versa.

Following Jaccard, Turrisi, and Wan (1990), the scores on the continuous variables were standardized before computing the interaction terms with condition to facilitate the interpretation of regression coefficients and to reduce multicollinearity (Cohen & Cohen, 1983). For subsequent simple slope analyses we created new variables for each continuous variable at one 1 standard deviation above, and 1 standard deviation below their respective means.

Effects on sadness

The analysis with sadness as the dependent variable revealed main effects of condition, sex, anger, need for approval, and a condition $\times$ SO effect (see Table 2.2, left column). Simple slope analyses testing the effect of the rejection manipulation on

anticipated sadness separately for participants high and low in SO, revealed only an effect among participants with high SO, B= 0.66, SE= 0.20, t= 3.28, p= .001. Among participants with low SO there was no effect of the rejection manipulation, B= -0.02, SE= 0.23, t= -0.10, p= .920. Thus, as expected, rejected participants with high SO anticipated higher sadness compared to their non-rejected counterparts. Participants with low SO, on the other hand, did not seem to be affected by the rejection manipulation. See Figure 2.1.

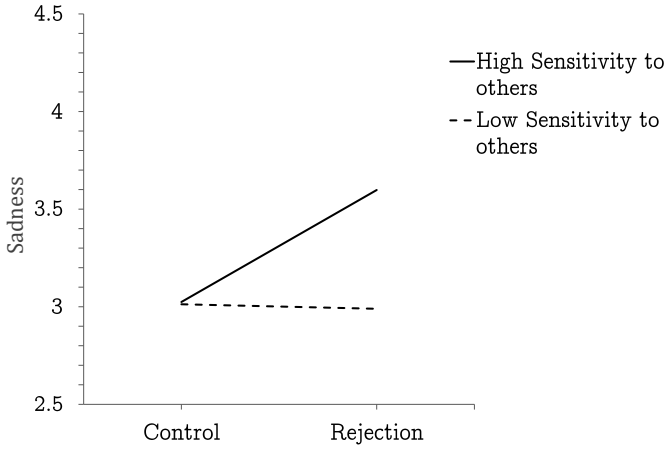

Figure 2.1: Anticipated sadness to threat scenarios among rejected and non-rejected participants with high and low levels of Sensitivity to others (+/- 1 standard deviation from the group mean).

We also conducted simple slope analyses testing the effect of SO separately within the rejection and control conditions. These analyses revealed no significant effect of SO in the control condition, B= -0.04, SE= 0.13, t= -0.28, p= .779. But, as expected, within the rejection condition SO was positively related with sadness, B= 0.30, SE= 0.12, t= 2.57, p= .012. This suggests that among rejected participants the ones with high SO anticipated higher sadness than participants with low SO.

Effects on anger

The analysis with anger as the dependent variable also revealed a condition × SO interaction effect, and additionally a significant Condition × Need for approval interaction effect. There were no main effects, except for a main effect of sadness (see Table 2.2, right column). Simple slope analyses revealed again only an effect of the rejection manipulation among participants with high SO, B= -.47, SE= .21, t= -2.22, p= .029. As expected, rejected participants with high SO reported

lower anticipated anger, compared to their non-rejected counterparts. Among participants with low SO, the means were in the expected direction, with heightened anticipated anger among the rejected ones compared to non-rejected ones, but the effect did not reach significance, B= .24, SE= .23, t= 1.03, p= .307. See Figure 2.2.

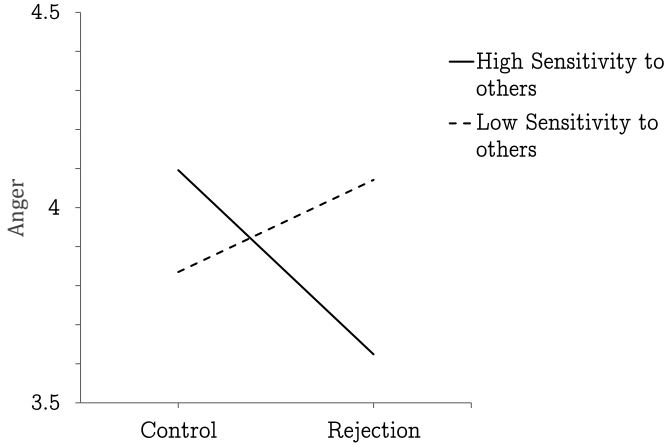

Figure 2.2: Anticipated anger to threat scenarios among rejected and non-rejected participants with high and low levels of Sensitivity to others (+/- 1 standard deviation from the group mean).

Within the rejection and control conditions separately, there was again no significant effect of SO in the control condition, B= 0.13, SE= 0.14, t= 0.97, p= .336. But within the rejection condition, there was a marginally significant negative relationship between SO and anticipated anger B= -0.22, SE= 0.12, t= -1.80, p= .075. This suggests that among rejected participants the ones with low SO anticipated higher anger than the ones with high SO.

Finally, subsequent simple slope analyses on the Condition × Need for approval interaction effect revealed that the rejection only impacted participants who reported low Need for approval (NA); they anticipated lower anger than their non-rejected counterparts, B= -0.48, SE= 0.22, t= -2.21, p= .030. But among participants with a high NA, there was no effect of the rejection manipulation, B= 0.24, SE= 0.22, t= 1.10, p= .276. The simple slope analyses testing the effect of NA within the rejection and control conditions separately, revealed only a significant effect of NA in the control condition, B= -0.30, SE= 0.11, t= -2.65, p= .010; but there was no association between NA and anger in the rejection condition, B= 0.06, SE= 0.14, t= 0.45, p= .665. See Figure 2.3.

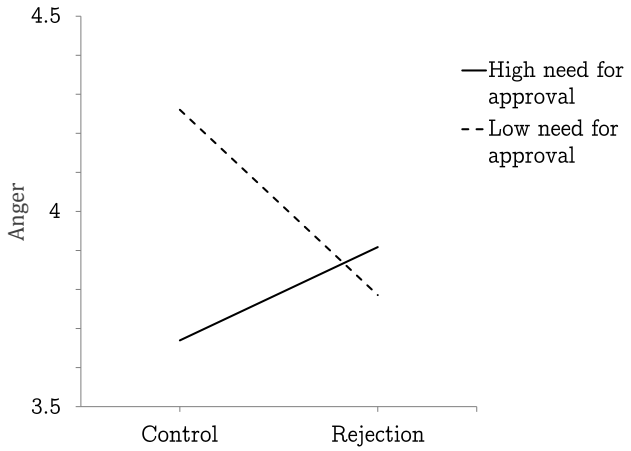

Figure 2.3: Anticipated anger to threat scenarios among rejected and non-rejected participants with high and low levels of Need for approval (+/- 1 standard deviation from the group mean).

Discussion

In the present chapter we proposed that levels of sadness and anger in response to a rejection depend on individual differences in the need for affiliation, as measured with sensitivity to others in interpersonal relationships. Our reasoning stems from the idea that the occurence of these emotions follows a pattern which reflects the social functions of these emotions (Keltner & Haidt, 1999; Keltner & Gross, 1999; Shaver et al., 2001; Tiedens, 2001). The results of our study confirmed our ideas and showed that participants with a high sensitivity to others anticipated higher sadness and lower anger in response to social threat scenarios when they were previously subjected to a rejection, compared to when they were not subjected to a rejection, and also compared to rejected participants with a low sensitivity to others. Moreover, among rejected participants sensitivity to others was positively associated with sadness, and negatively associated with anger.

In sum, sadness seemed to be the primary response to rejection among participants with a high sensitivity to others, while anger seemed to be the primary response among participants with a low sensitivity to others. This pattern of emotional responses in interaction with personality is in line with social-functional accounts of emotions as a means of coordinating social interactions and relationships (Averill, 1992; Tooby & Cosmides, 2008); sadness evokes sympathy in others and is ultimately directed at restoring trust and affiliation, while anger evokes fear in others and is ultimately directed at restoring status (Keltner & Gross, 1999;

Keltner & Haidt, 1999; Shaver et al., 2001; Tiedens, 2001). Possibly, individuals who are more sensitive to others are more likely to prefer inclusion to be based on liking and trust. This explains why their primary response is sadness, because this emotions is more functional in showing others that one is warm and trustable than anger. Likewise, individuals with a low sensitivity to others probably care less about being granted inclusion based on trust and liking, and instead are more used to claiming inclusion, for which showing anger is more effective than showing sadness. We believe that both the affiliation and status pathways may restore one's inclusionary status; sadness through obtaining trust and liking, and anger through competition and intimidation which can be seen as the quick (er and sometimes dirty) route towards inclusion. In support of this this idea a recent study by De Waal-Andrews and Van Beest (2012) showed that being granted inclusion, more than claiming inclusion, leads people to feeling liked.

Strengths and Limitations

Because we found these results in response to hypothetical situations in which people had to anticipate their emotional responses, these results imply that anger and sadness are not only pain signals, but presumably also ready the individual for dealing with the situation. In most rejection experiments emotions are typically assessed in response to the rejection experience itself to measure the direct impact of rejection on affect. We used a projection measure, because asking participants to *anticipate* how they would feel in a new situation, other than the one that they are currently in, fits the basic assumptions underlying our hypotheses better; namely that being rejected not just hurts, but also impacts how one anticipates to deal with subsequent threat situations. Future research might investigate under what circumstances these emotional response tendencies lead to actual adaptive behaviour.

One could question whether in reality people would show the same emotions that they anticipated in the study. Our results show that at least at the anticipatory level, participants do seem to get in the 'right' response mode/action tendency – they get in the response mode that fits with their sensitivity to others. Under which circumstances these action tendencies then extend to actual emotional and behavioural responses in the real world is of course an empirical question, but our main focus was to determine the initial response tendency.

Unexpectedly, we did not find that among individuals with a low sensitivity to others being rejected (compared to not being rejected) led to elevated anger. A possible explanation for might lie in the nature of our control condition. Note that

our control condition was not a particularly positive experience for participants, as participants were unexpectedly left alone by their future interaction partners, albeit with an apology and a message indicating that it was not personal. In many rejection experiments the control manipulation either consists of a non-rejection with participants still under the assumption that they will meet their partner (which can be considered a relatively neutral event), or an inclusion experience (which can be considered a relatively positive event, compared to a non-rejection). Thus, whereas in most rejection experiments the control condition varies in valence between neutral and positive, our control condition probably had a valence below neutral, and was perhaps experienced by some as an indirect rejection. We like to see this as a strength of our study, because in this way our test was relatively conservative. But in hindsight this particular nature of our control condition might have been partly the reason why regarding our results on anger the effect of the rejection among individuals with a low sensitivity to others did not reach significance; it is possible that compared to the rejection condition, the control condition – due to its relatively ambiguous nature – elicited considerable anger, rendering the difference with the rejection condition non-significant.

Interestingly, our results also suggested a role for individual differences in need for approval in sad and angry responses following a rejection. Whereas participants with a high need for approval did not seem to be affected in their anger in response to the rejection manipulation, and high need for approval was associated with higher sadness, irrespective of the rejection experience, interestingly participants with a low need for approval seemed to be the only ones who were affected by the rejection; they anticipated lower anger as a consequence of the rejection manipulation. Also, these participants anticipated higher anger than participants with high need for approval, but *only* in the control condition – in the rejection condition there was no such relationship. One way to make sense of this finding is by linking need for approval with the anxious/avoidant attachment style: intense fears of being rejected, in combination with a seeming avoidance of close contact with others (Bartholomew & Horowitz, 1991). People with high need for approval might be extremely anxious and fearful of rejection in many situations; perhaps to them our control manipulation was no less threatening than our rejection manipulation, because in both conditions participants were unexpectedly left alone by their partner. But among participants with a low need for approval, a seeming nonchalance exists when no actual threat of abandonment is present; in the control condition these individuals responded to the scenario's with rather exaggerated anger, perhaps as an expression of their 'I do not need anybody to like me' attitude. But this attitude then seems to dissapear when they experience

a rejection, as is evident from the steep drop in anger in the rejection condition.

Relationship to literature and future directions

Previous studies have also addressed the question whether there are individual determinants of anger and sadness to social rejection. Bushman and Baumeister (1998) argued that narcissistic egotism is especially predictive of anger and aggression after a rejection. Twenge and Campbell (2003) made a similar point and argued that narcissism leads to direct and displaced aggression (towards an innocent third party) after a rejection. A study conducted by Sommer and Baumeister (2002) demonstrated that people with low self-esteem automatically respond to interpersonal rejection with self-deprecation and withdrawal, whereas those with high self-esteem tend to react with affirmation and perseverance. Although the authors did not measure emotional reactions, a parallel can be drawn between sadness and self-depreciation/withdrawal on the one hand, and between anger and affirmation/perseverance on the other hand. On a general note, the present study adds to these findings by showing distinct angry and sad responses to rejection depending on one's personality.

Recently Çelik, Lammers, Van Beest, Bekker, and Vonk (2013) showed distinct sad and angry reactions to different types of social rejection. They proposed that people judge, accept and reject others based on their evaluations of others' warmth and competence. Warmth and competence are core dimensions on which people evaluate others' personality and behavior. Basically, a warm individual is considered trustable (i.e. having friendly intentions), while a competent individual is considered intelligent and efficient (Cuddy et al., 2008). In one of their studies Çelik, Lammers, et al. (2013) showed that interpreting an ambiguous rejection as a sign that one lacks warmth primarily elicits sadness, whereas interpreting a rejection as a sign that one lacks competence primarily elicits anger. The distinction that we made in the introduction between obtaining inclusion through trust and status is closely related to the warmth-competence distinction that Çelik, Lammers, et al. (2013) make. Our findings add to their findings by showing that the differences in sad and angry reactions in response to being rejected are also related to individual differences in need for affiliation, i.e. need for warmth. Future research might use an additional measure that assesses individuals' need for status as well. We would expect that these needs are inversely related, and such the need for status would predict anger and sadness in an opposite direction as the need for affiliation.

Related to the above, individual differences in the need for affiliation and status

might also be related to differences in how people interpret the reason of a rejection. Future research could investigate whether individuals with a higher need for affiliation might be more likely to interpret a rejection as a sign that they are perceived as lacking warmth, whereas individuals with a higher need for status might be more likely to interpret the same rejection as a sign that they are perceived as lacking competence.

Finally, according to the *Needs threat model* (Williams, 2007a, 2007b), a damaged sense of control – one of the most basic human psychological needs – is the prime cause of anger and aggression after a rejection experience. The model considers that in some cases individuals do not seek reinclusion but simply seek to reassert control. We agree with this, but we would also like to point out that it may be important to distinguish between angry responses to rejection and aggressive responses to rejection. While aggression is indeed destructive for oneself and others, and diminishes one's chances for reinclusion, a healthy level of anger may be functional in achieving acceptance through obtaining status. As such, we would like to distinguish between rejections that elicit adaptive responses (responses that increase one's chances for reinclusion) and rejections that elicit non-adaptive responses (responses that diminish one's chances for reinclusion). Non-adaptive responses might be more likely to occur when an individual is not able to make sense of the rejection, i.e. when the rejection is unfair, unexpected, and no reason is given, because in these cases obtaining reinclusion might seem impossible to the individual. Note that in our paradigm the rejection implied a reason: the participants' self-descriptions that were ostensibly read by their partners, who consequently did not want to meet them. Future research might directly compare the impact of rejections with and without a reason.

Conclusion

The results in this paper show that rejection can elicit two distinct emotional pathways in response to subsequent social threats, depending on individual differences in sensitivity to others. These findings add to the rejection literature in that they show that the emotional responses to social rejection are not only a signal of social pain, but presumably ready the individual for dealing with new threats.

Table 2.1: Correlations between all measured variables (Experiment 1).

	1	2	3	4	5	6	7	8
1. Sex								
2. Sensitivity to others	.416***							
3. Need for approval	.220*	.553***						
4. Preoc. with relations	.114	.561***	.598***					
5. Confidence	-.066	-.083	-.241**	-.148				
6. Discomfort with relations	.039	-.147	.193*	.031	-.488***			
7. Relations as secondary	-.095	-.290**	-.079	-.141	-.159	.240**		
8. Anticipated sadness	.315***	.540***	.561***	.436***	-.204*	.019	-.095	
9. Anticipated anger	.079	.321***	.298**	.361***	-.030	-.096	.008	.714***

**p< .05, **p< .01, ***p< .001, Sex: female = 1, male = 0.*

Table 2.2: Effects of rejection, sensitivity to others and attachment style on sadness and anger (Experiment 1).

	Sadness				Anger			
	B	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*
Constant	3.135	0.100	31.390	.001	3.908	0.070	56.067	.001
Condition	0.318	0.126	2.526	.013	- 0.118	0.133	- 0.886	.378
Sex	0.417	0.148	2.809	.006	- 0.270	0.156	- 1.728	.087
Sadness	---	---	---	---	0.794	0.083	9.616	.001
Anger	0.653	0.068	9.616	.001	---	---	---	---
SO	0.133	0.091	1.461	.148	- 0.046	0.095	- 0.488	.627
NA	0.293	0.084	3.468	.001	- 0.117	0.091	- 1.282	.203
PO	- 0.054	0.085	- 0.635	.527	0.136	0.086	1.588	.116
DC	- 0.001	0.074	- 0.008	.993	- 0.048	0.076	- 0.631	.530
RS	- 0.049	0.067	- 0.739	.462	0.092	0.068	1.356	.178
CO	- 0.158	0.070	- 2.267	.026	0.121	0.073	1.672	.098
Condition × SO	0.341	0.172	1.984	.050	- 0.354	0.176	- 2.004	.048
Condition × NA	- 0.269	0.168	- 1.599	.113	0.357	0.171	2.088	.040
Condition × PO	- 0.080	0.166	- 0.481	.632	- 0.014	0.171	- 0.083	.934
Condition × DC	0.190	0.149	1.279	.204	- 0.168	0.153	- 1.099	.275
Condition × RS	0.053	0.134	0.394	.694	0.118	0.137	0.863	.390
Condition × Conf	- 0.057	0.143	- 0.398	.692	0.249	0.145	1.726	.088

SO= Sensitivity to others; NA= Need for approval; PO= Preoccupation with relationships; DC= Discomfort with closeness; RS= Relationships as secondary; CO= Confidence in relationships.

Chapter 3

Different reasons for rejection elicit different emotional responses

This chapter investigates angry and sad responses to rejections that are motivated by perceptions of lack of warmth, and perceptions of lack of competence. I hypothesized that rejection due to lack of competence would primarily lead to anger, whereas rejection due to lack of warmth would primarily lead to sadness. Experiment 2 measured subjective perceptions of competence and warmth judgments after an unspecific rejection. Experiments 3 and 4 manipulated those perceptions. In all studies, rejection that was perceived to be the result of lack of competence led primarily to anger, while rejection that was perceived to be the result of lack of warmth led primarily to sadness. In addition, Experiment 4 showed that rejection that was perceived to be the result of lack of competence led primarily to self-enhancing behavior, while rejection that was perceived to be the result of lack of warmth led primarily to affiliative behaviors.

This chapter is adapted from:

Çelik, P., Lammers, J., Van Beest, I., Bekker, M. H. J., & Vonk, R. (2013). Not all rejections are alike: The fundamental distinction between competence and warmth in social rejection. *Journal of Experimental Social Psychology, 49*(4), 635-642.

Introduction

In the past two decades the phenomenon of social rejection has received a lot of attention (Baumeister, Brewer, Tice, & Twenge, 2007; Gerber & Wheeler, 2009; Williams, 2001, 2007a, 2007b). Among the most contradictory reactions to rejection are the emotions that people experience when they are rejected. Rejection can elicit sadness, but it can also lead to anger (Chow et al., 2008; Richman & Leary, 2009; Van Beest & Williams, 2006; Van Beest et al., 2011; Gerber & Wheeler, 2009). The fact that rejection leads to both anger and sadness does not appear puzzling at first sight. After all, both are negative, unpleasant emotions. However, looking at these emotions from a functional perspective, it is clear that they are very different from each other, each with different antecedents and behavioral consequences (Ekman, 1992; Frijda, 1987; Frijda et al., 1989; Keltner & Gross, 1999; Van Kleef et al., 2010; Zeelenberg et al., 2008).

Specifically, sadness is an emotion that is typically part of a 'horizontal' managing of interpersonal relationships. Showing sadness elicits nurturance from others (Vingerhoets et al., 2000; Zeifman, 2001). Within the individual it leads to feelings of helplessness that can help to motivate the individual to actively reach out to others (Gray et al., 2011; Shaver et al., 2001). In contrast, anger is part of a 'vertical' managing of interpersonal relationships. It signals dominance and toughness, causing others to concede more quickly (Knutson, 1996; Sinaceur & Tiedens, 2006; Van Beest et al., 2008). Anger is an energizing emotion that motivates the individual to reassert power and status through competition, or frightening others into compliance (Kassinove et al., 2002; Keltner & Haidt, 1999; Lelieveld et al., 2012; Shaver et al., 2001; Van Kleef, 2010). In line with this Tiedens et al. (2000) showed that people expressing anger were perceived as being of higher status than people expressing sadness. Thus, in many ways anger and sadness are opposites, or even orthogonal to each other. How can rejection have such opposite effects on emotions? We propose that if we define rejection beyond the mere fact of being left out and specify the rejection experience we can account for this seeming contradiction and obtain a clearer image of the consequences of rejection.

Our basic idea builds on the observation that social rejection is not a capricious behavior that is the result of people's impulsiveness; people have a reason for why they reject others. When we take a closer look at the main manipulation techniques used to induce feelings of rejection, cyberball (Williams & Jarvis, 2006), the life alone prognosis paradigm (Baumeister et al., 2002) or the get acquainted paradigm (Nezlek et al., 1997), they all have in common that subjects do not get much information regarding the possible reason of rejection. Subjects suddenly no

longer get the ball passed (in the cyberball paradigm), or they are told that they will lead a lonely life without friends (in the life alone paradigm). Subjects are either rejected or not, but they are never told why. Although this of course has the benefit of testing the 'pure' effect of rejection without any additional information, these manipulations ignore the complexity of the experience of rejection. After all, in practice people are almost never rejected out of the blue. People accept and reject others based on specific perceptions and judgments of them (Kurzban & Leary, 2001). Moreover, when people are the victim of rejection themselves – especially when there is no apparent reason – they will also think about the possible judgments and perceptions that their rejecters have about them.

Rejection is thus a highly social phenomenon where interpersonal perceptions and meta-perceptions on why this rejection occurred play a key role. In the current chapter we aim to demonstrate that people's perceptions of the reasons why they are rejected critically shape their emotional reactions. We expect that if people are rejected, they are highly motivated to find out why. This idea is supported by the fact that when people are ignored for no apparent reason, they either assume inadequacies in one's self, attribute intent to the rejecter, or look for mitigating circumstances (Geller, Goodstein, Silver, & Sternberg, 1974). Social rejection often leads to a drop in self-esteem, suggesting that people worry about how they look in the eyes of their rejecter and others (Leary, Cottrell, & Phillips, 2001; Van Beest & Williams, 2011; Zadro, Williams, & Richardson, 2004).

We propose here that perceptions about the reasons of social rejection can be best understood by relying on the distinction between interpersonal warmth and competence. In social perception literature, warmth and competence are seen as core and universal components of interpersonal perception (Cuddy et al., 2008; Fiske et al., 2007). When people evaluate individuals on competence they rely on characteristics such as skill, creativity, intelligence, foresight and competitiveness, whereas when they evaluate individuals on warmth they rely on characteristics such as friendliness, sincerity, helpfulness, trustworthiness and cooperativeness. The distinction between these two domains goes back many decennia, and was first described referring to the orthogonal axes of circumplex models (Leary, 1957). The vertical axe reflects hierarchical relations involving rank and status whereas the horizontal axe reflects communal relations involving love and affiliation (Kiesler, 1983; Wiggins, 1979; Wiggins & Broughton, 1985). These axes since then have been variously labeled as power vs. love, agency vs. communion or dominance vs. affiliation. Despite the different labels, research suggests a substantial overlap between these conceptual opposites (Abele & Wojciszke, 2007). The dominant labeling in contemporary research is competence vs. warmth. Recent studies

have shown that people everywhere differentiate each other by liking (warmth, trusting) and respecting (competence, efficiency). Moreover, 82% of the variance in everyday perceptions of others can be accounted for by judgments pertaining to competence and warmth (Wojciszke, 2005; Wojciszke, Bazinska, & Jaworski, 1998).

In the current chapter, we aim to demonstrate that perceptions of warmth and competence judgments lye at the core of the rejection experience by showing very specific and meaningful effects of social rejection on emotions. We base our reasoning on the notion that the functional aspects of emotions typically observed after social rejection – anger and sadness – converge with the vertical and horizontal aspects of relationships that underlie the warmth-competence model. Based on the notion that individuals will always seek to understand their social environment (Kelley, 1973) and will think about ways to undo or repair what has been damaged by the rejection, we expect that rejection that is (perceived to be) due to lack of warmth should lead to distinct emotional reactions compared to rejection that is (perceived to be) due to lack of competence.

Predictions

Specifically, we propose that, if rejected participants perceive that those who rejected them believe they lack warmth, they should primarily experience sadness, while if they perceive that their rejection is due to their lack of competence, they should primarily experience anger. This reasoning follows from a socialfunctional account of emotions as a means of coordinating social interactions and relationships to meet specific problems (Averill, 1992; Tooby & Cosmides, 2008). A rejection based on lack of warmth is basically a message that one is not liked. This is associated with the appraisal that one cannot do much about this judgment; whether one is liked or not is outside one's control and may even induce a sense of helplessness. The consequence is that the individual will seek the specific type of social resource that will reduce this sense of helplessness. We argue that sadness is an appropriate response because it evokes sympathy from others. Sadness signals to the outside world that one is a warm person and in turn elicits the kind of social support that was damaged by this type of rejection (Vingerhoets et al., 2000; Zeifman, 2001). Participants should not experience much anger, because anger does not signal warmth. In fact, prior research has shown that it may even undermine social support (Lelieveld et al., 2012; Wubben, De Cremer, & Van Dijk, 2009). Importantly, we do not contend that anger will be totally absent, but this emotion will mainly emerge because rejections are often perceived as unfair (Lind & Tyler,

1988).

Conversely, we propose that if participants perceive that their rejection is caused by the fact that those who rejected them believe they lack competence, they should primarily experience anger. A lack of competence means that others are better and higher in rank, which should elicit the desire to compete. We know from previous research that anger is specically functional in restoring competence and status anger not only motivates and orients the individual towards action, but also causes others to concede more quickly (Kassinove et al., 2002; Tiedens, 2001; Van Kleef, 2010). Participants should experience less sadness, because sadness is associated with passivity and inhibition (Shaver et al., 2001) and is therefore a poor aid in restoring competence and status (Tiedens, 2001). Again, we do not contend that sadness will be totally absent in reaction to a (perceived) competence rejection, but this emotion will be mainly directed at individuals who are perceived as supportive in regaining competence, e.g. good friends or family. People will not show sadness towards the ones who are perceived as the 'competition'. In sum, we propose that social rejection should lead to two fundamentally opposite emotional reactions, depending on whether that rejection is perceived to be due to lack of warmth or due to lack of competence.

Overview of studies

We tested these predictions in three studies. In Experiment 2 we measured the perception of an unspecific rejection. That is, in this study, a confederate, for unclear reasons, rejected the participant. The rejection was accompanied by mildly negative warmth and competence judgments, ostensibly coming from the confederate. We then measured how the target of the rejection perceived those judgments. We expected that these perceptions would differentially predict feelings of sadness and anger in the participant. In the next two studies we manipulated the perception of rejection. In Experiment 3, participants were rejected by an ostensible other participant, but now unambiguously. The participant was either rejected for lacking competence, or for lacking warmth (in the eyes of the other participant), or was not rejected. In Experiment 4, we used a selective recall manipulation. Participants either recalled an experience of being rejected due to lack of competence, or due to lack of warmth.

Experiment 2

In this study participants were rejected for ambiguous and unclear reasons (or were accepted), by an ostensible other participant, in reality a confederate. Participants read simple numerical evaluations of 5 competence and 5 warmth traits presented in random order, ostensibly filled in by the other participant. Importantly, we did not tell our participants explicitly that they were judged on these traits, nor that these were traits were related to competence and warmth. Our main assumption was that participants would use this information to make sense of the rejection and that this sense-making would be evident from how they remembered the evaluation in hind sight. We used the degree to which warmth and competence ratings were remembered as lower than actual as an indicator of how strongly the participant believed that he or she was rejected because of lack of warmth and/or competence (for a similar procedure see, Gotlib, 1983). We expected that the more participants perceived they were rejected because of lack of competence (i.e. the more they remembered the competence ratings to be lower than they were in reality) the angrier they would be, whereas the more they perceived they were rejected because of lack of warmth (i.e. the more they remembered the warmth ratings to be lower than they were in reality), the sadder they would be.

Method

Participants and design

In return for course credit, 60 first year psychology students of Tilburg University (57 women; M_{age}= 19.68 years; SD_{age}= 1.79) were randomly assigned to one of two experimental conditions (rejection vs. no rejection).

Procedure

Participants were briefly introduced to a female confederate[1] and were told that they would participate in a study about first impressions. During this brief meeting the confederate made some short neutral remarks. To set the stage for the rejection manipulation, participants were told that they would meet their partner (the confederate) for an interview in a second, unrelated study, but that both would first indicate their impressions of each other (as part of the first study). The participant and confederate were then seated in individual adjacent cubicles within hearing range, where both the participant and confederate were instructed to rate their partner on ten traits according to their first impression. Five of these

[1] The confederate was always the same person.

traits were related to warmth (likeable, sympathetic, trustworthy, nice, and kind) and five to competence (wise, sensible, has a valuable opinion, can be taken seriously, has something useful to say) (Cuddy et al., 2008). Participants were asked how much they thought each trait fitted their partner on a scale between 1 and 10, with the option to give half marks (e.g. 5.5). We chose this 10 point scale because it corresponds to the standard Dutch educational grading system (where everything below 6 is a fail grade) and thus ensured strong evaluative associations. After about 5 minutes, the experimenter collected participants' rating form and handed them the ratings that the confederate had supposedly completed at the same time about them. In reality all participants received the same ratings that were prepared in advance. Thus all participants received the same grades independent of experimental condition. These ratings ranged between 4.5 and 8. In the Dutch system, an 8 equals a score that is very good, while a 4.5 equals a score that would be a clear fail-grade. On both the warmth and competence domains, the mean rating was 7 (which equals a B or B+ in the US). On both domains there were low (4.5) and high (8) ratings, to ensure that a rejection on either trait would be seen as realistic and believable. Note that these traits were presented in randomized order and were not explicitly labeled with competence and warmth to ensure the ambivalent nature of the evaluation.

Rejection manipulation. Next, participants in the rejection condition heard the confederate (in the adjacent cubicle) loudly express to the experimenter her unwillingness to continue with the interview, pack her belongings and leave. The confederate made no explicit reference to the participant, to create doubt about whether the participant was personally rejected or not. We assumed that this would especially trigger the participant to look for possible explanations, and examine all available information closely; in this case the peronality ratings ostensibly made by their partner. The experimenter then apologized and explained to the participant that their partner had left unexpectedly without giving further explanation, but that she did fill out the rating form, and asked whether the participant still wanted to continue with the study. All participants indicated that they wanted to continue. Participants in the control condition did not hear anything of the above, so they remained under the assumption that they would still meet their partner. The experimenter then handed the rating form to the participant and left the cubicle (saying she would get the next set of questionnaires) so that participants could view the ratings in private. After about 20 seconds the experimenter returned to the participant with a booklet containing the main dependent measures. Before leaving the cubicle she collected all other materials, including the ratings supposedly given by the confederate.

Measures

First, we measured our main dependent variables, sadness and anger, by asking participants to rate their (dis)agreement with two statements: "I feel sad" and "I feel angry" on two 7-point scales ranging from *strongly disagree* (1) to *strongly agree* (7).

Next, we measured how participants perceived the rejection experience by asking them to remember as best as possible the trait ratings they received from the confederate (i.e. the traits related to competence and warmth). Under the guise of a study on memory, all participants were asked to recall and write down the 10 ratings that the confederate had previously given them, on an empty rating form that included the same traits as shown before (likeable, sensible, etc.). Note that the form containing the ratings was previously collected by the experimenter. Hence, participants had to guess. For our main analyses we computed difference scores separately for the warmth and competence items by subtracting the actual ratings from the recalled ratings, which resulted in 5 difference scores for each domain. These difference scores were then summed into two composite variables – recall of warmth ratings and recall of competence ratings – with 0-scores indicating correct recall, negative scores indicating a lower than actual rating, and positive scores indicating a higher than actual rating.

Next, as a manipulation check, we asked all participants in the rejection condition whether they had heard the confederate express the unwillingness to continue cooperating in the next part of the study. All participants indicated that they in fact had. Finally, participants were thanked and debriefed.

Results

Preliminary analyses

To make sure that our results were not due to differences in partner evaluations, we first checked whether participants differed in how they rated their partners depending on condition. Note that these ratings were collected before the rejection experience and hence we expected no difference between conditions. This was indeed the case, there was no difference between conditions in how participants rated their partner on warmth and competence, $t(58) = -.84$, $p = .403$. Overall, participants had a favorable opinion about their partner, with a mean rating of 7.6 on a scale from 1 to 10 ($SD = 0.57$).

Effects on emotions

To test our main predictions, we ran two regression analyses. Specifically, we expected that, compared to respondents in the control condition, in the rejection condition sadness scores would be exclusively predicted by meta-perceptions of lack of warmth (i.e. a more negative recall of warmth item ratings), whereas anger scores would be exclusively predicted by meta-perceptions of lack of competence (i.e. a more negative recall of competence item ratings). In both regression analyses we entered as predictors Condition (rejection= 0.5; acceptance= -0.5), Warmth-perception (composite mean of recalled warmth ratings minus actual warmth ratings), Competence-perception (composite mean of recalled competence ratings minus actual competence ratings) and their interactions with condition. For ease of interpretation of the interaction effects, and to reduce multicollinearity, we standardized the Warmth-perception and Competence-perception before computing the interaction terms with Condition (Cohen & Cohen, 1983). For subsequent simple slope analyses we created new variables for Warmth-perception and Competence-perception at one 1 standard deviation above, and 1 standard deviation below their respective means.

Sadness is predicted by perceptions of lack of warmth. As expected, sadness scores were only predicted by the Condition × Warmth interaction, B= -0.76, SE= 0.39, t= -1.93, p= .058. The Condition × competence perception interaction was not significant (B= 0.40, SE= 0.38, t= 1.04 p= .305), and neither were there any main effects of Condition (B= -0.01, SE= 0.37, t= -0.02, p= .988), warmth perception (B= -0.16, SE= 0.20, t= -0.79, p= .432) or competence perception (B= -0.24, SE= 0.19, t= -1.24, p= .220). See Figure 3.1.

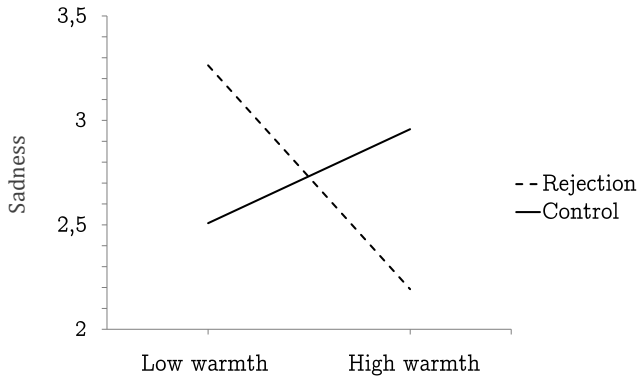

Figure 3.1: A lower warmth interpretation is associated with higher sadness in the rejection condition (Experiment 2).

Simple slope analyses revealed that in the rejection condition warmth perception was negatively related to feelings of sadness B= -0.54, SE= 0.26, t= -2.06, p= .044; the lower the recall scores of the warmth items were, the higher the sadness scores were in the rejection condition. In the control condition there was no relationship between warmth perception and sadness, B= 0.23, SE= 0.30, t= 0.76, p= .449. This means that after a rejection sadness is only predicted by perceptions of lack of warmth, but not by perceptions of lack of competence.

Anger is predicted by perceptions of lack of competence. The same analysis, this time with anger scores as the dependent variable, revealed that anger scores were only predicted by a significant Rejection × Competence-perception effect, B= -1.07, SE= 0.47, t= -2.29, p= .026. The Condition × Warmth interaction was not significant (B= -0.40, SE= 0.48, t= -0.83, p= .408). Again, we found no main effects of Condition (B= -0.20, SE= 0.45, t= -0.44, p= .66), warmth perception (B= -0.05, SE= 0.24, t= -0.22, p= .825) or competence perception (B= -0.09, SE= 0.23, t= -0.38, p= .709). See Figure 3.2.

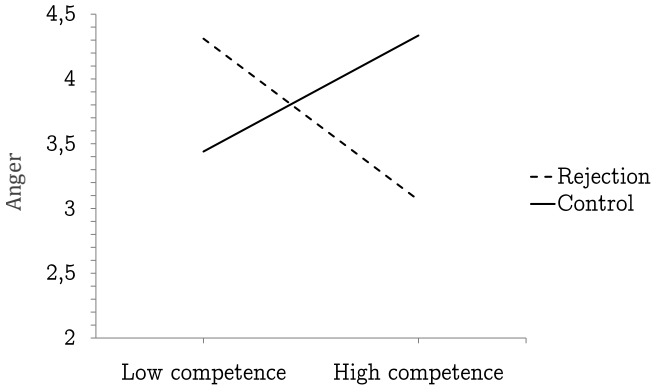

Figure 3.2: A lower competence interpretation is associated with anger in the rejection condition (Experiment 2).

Simple slope analyses now showed that in the rejection condition competence-perception was negatively related to feelings of anger, B= -0.62, SE= 0.31, t= -2.01, p= .049; The lower the recall scores of the competence items were, the higher the anger scores were in the rejection condition. In the control condition there was no relationship between competence-perception and anger, B= 0.45, SE= 0.35, t= 1.28, p= .21. This means that after a rejection anger is only predicted by perceptions of lack of competence, but not by perceptions of lack of warmth.

Post-hoc analyses

We also checked whether memory was affected by condition. A 2 × 2 (Condition [between: rejection, acceptance] × Recall [within: competence, warmth]) between–within mixed ANOVA revealed no main effect of Condition $F(1, 58)= 1.60$, $p= .211$, nor a Condition × Recall effect, $F(1, 58)= 1.09$, $p= .302$. This means that rejection did not affect memory; between conditions participants were fairly equal in how they remembered the warmth and competence ratings. We did find a non-interesting main effect of Recall, $F(1, 58)= 18.86$, $p< .001$, $\eta_p^2= .245$, showing that participants underestimated competence ratings ($M= -1.54$, $SD= 2.03$) more than warmth ratings ($M= -0.29$, $SD= 1.66$). This makes sense, given that our participants were students and therefore perhaps more pre-occupied with competence than with warmth.

Discussion

The results of Experiment 2 showed that exposing participants to an ambiguous rejection experience is related to different emotional reactions, depending on why participants thought they were rejected; the part of the rejection that participants attributed to lack of warmth, uniquely predicted sadness, whereas the part of the rejection that participants attributed to lack of competence uniquely predicted anger. These results could not be explained by memory, as participants who were rejected did not make more or less mistakes in remembering the ratings they received. Yet these results rely on observing (random) differences in perceptions of competence and warmth. To gather more direct, causal evidence, Experiment 3 therefore manipulated the type of rejection.

Experiment 3

In this study, participants were exposed to a warmth or competence rejection manipulation, or to an acceptance condition. They read an unambiguous clear reason of why they were rejected, ostensibly by another participant. In reality there was no other participant. The experimental set up was similar to our previous study, however this time participants received negative evaluations either on all of the warmth traits, or on all of the competence traits, while in the acceptance condition participants received positive evaluations on all traits. We expected that a rejection due to lack of competence would lead to anger (and less to sadness); while a rejection due to lack of warmth would lead to sadness (and less to anger). Furthermore, in the present study we sought to increase the reliability of our

measurement of anger and sadness by including additional externalizing (anger-related) and internalizing (sadness-related) emotion items.

Note that we did not hypothesize on differences between the two types of rejection, e.g. whether a rejection due to lack of warmth would lead to more sadness and less anger than a rejection due to competence. Our main point is that within the two types of rejection, one type of emotion will be more prominent than the other one.

Method

Participants and design

In return for course credit, 67 first year psychology students of Tilburg university (55 women; M_{age}= 19.30 years, SD_{age}= 2.92) were randomly assigned to one of three experimental conditions (competence rejection, warmth rejection, acceptance).

Procedure

Participants were told that they were participating in a study on indirect impression formation that investigated the ways in which impressions were formed in the absence of face-to-face interaction. They were told that their (ostensible) partner was already working in a different cubicle (in this study there was no confederate physically present). It was explained that they would exchange written information with each other, which they would use to form an impression of each other (for a similar procedure see, Mallott, Maner, DeWall, & Schmidt, 2009). To make the rejection manipulation possible participants were told that they could meet their partner afterwards if desired.

Next, participants started working (in individual cubicles) on the forms that would ostensibly be delivered to their partner by the experimenter as part of the study on impression formation. They received a booklet containing a bogus personality test and bogus open ended questions about four hypothetical but realistic social situations. We included these items to boost realism of the experiment (i.e. that participants could form an actual opinion of each other, on the basis of which they could either reject or not). Participants believed that their partner was already filling out the same booklet. After about 10 minutes (during which participants had ample time to complete the booklet) the experimenter collected the booklet, supposedly brought it to the partner and came back delivering the booklet that was supposedly filled out by their partner, together with an empty rating form. The rating form contained the same ten warmth and competence items used

in Experiment 2. The experimenter instructed participants to carefully read the information their partner had provided them and then indicate their impression of their partner using the rating form. Similar to procedures in Experiment 2, all items on the form were randomized and completed on a scale between 1 and 10.

Rejection manipulation. Next, participants were asked to indicate whether they wanted to meet their partner, with a "yes-no" checkbox. In addition, participants were given the option to write a short personal message to explain their choice, if desired. After about 5 minutes, the experimenter picked up participants' ratings about their partner and gave them the rating form that their partner had supposedly completed about them.

In both rejection conditions, participants read that their partner did not want to meet them. In addition, in the rejection due to lack of competence condition the form contained negative ratings (scores between 4 and 5) on all competence traits and positive ratings (scores between 7 and 8) on all warmth traits. In the rejection due to lack of warmth condition, the ratings were in the opposite direction: the competence ratings were positive and the warmth ratings were negative. We avoided extremely low and extremely high ratings to bolster credibility. In addition to this, in the rejection due to lack of competence (warmth) condition, their partner had supposedly written in the optional space for personal messages:

> "You seem a very warm and likeable (*intelligent and competent*) person to me! But on the other hand, you don't come across as very clever (*friendly*), sorry!"

In the control condition, the checkbox indicated that the partner wanted to meet the participant. Also, the form contained positive ratings (between 7 and 8) on both the competence and warmth traits. Attached was a personal message, supposedly written by the participant's partner that said:

> "You seem a very intelligent and likeable person to me. I would like to meet you!"

Measures

After participants read how their partner evaluated them and that their partner was or was not interested in meeting them afterwards, we measured sadness (sad, gloomy, plaintive, down & lonely; α= .93) and anger (angry, irritated, insulted, annoyed & hostile; α= .85). Participants were asked to rate their (dis)agreement with each emotion on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7). Next, to check that participants had noticed the manipulation, they

were asked to report their partner's choice (whether to meet or not). Finally, to be able to control for the possibility that differences in emotional reactions could be due to differences in how upset participants felt by the two types of rejection, we asked them "How do you feel about your partner's choice?" and "How do you feel about the evaluation you received from your partner" both on a 7-point Likert scale between *very happy* (1), *don't care* (4) and *very upset* (7) (r= .80, p< .001). All participants were thanked and debriefed after finishing.

Results

Preliminary analyses

All participants successfully indicated the correct answer to the question about their partner's choice (i.e. all participants in the rejection conditions indicated that their partner did not want to meet, while all participants in the acceptance condition indicated that their partner did want to meet them). We also checked for possible differences between the rejection and acceptance conditions regarding participants' ratings of their partners. As in Experiment 2, these ratings were collected before the rejection experience. We found no difference between the rejection and inclusion conditions, $t(64)$= -1.57, p= .122. Overall, participants had a favorable opinion about their partner. Mean ratings of warmth and competence were 7.8 on a scale from 1 to 10 (SD= 0.59). Furthermore, 94% of all participants indicated that they wanted to meet their partner after the experiment. We did not exclude participants who did not want to meet their partner as this did not affect our results.

Second, we checked whether the two rejection types were equally upsetting. An ANOVA with Condition (competence, warmth, acceptance) as the independent variable and the degree to which participants were upset as the dependent variable, revealed a significant main effect of Condition, $F(2, 64)$= 100.50, p< .001, η_p^2= .760. Simple comparisons showed that participants felt much more upset in both rejection conditions ($M_{competence}$= 4.67, $SD_{competence}$= 0.78; M_{warmth}= 4.82, SD_{warmth}= 0.78), compared to the acceptance condition (M= 2.04, SD= 0.69), $F(1, 64)$= 200.26, p< .001, η_p^2= .760. Importantly, the two rejection conditions did not differ in the degree to which participants were upset, $F(1, 64)$= 0.44, p= .510, η_p^2= .007.

Effects on emotions

Our main prediction was that we expected more sadness than anger in the rejection due to lack of warmth condition, and more anger than sadness in the rejection

due to lack of competence condition. A 2 × 2 (Condition [between: warmth, competence, acceptance] x Emotions [within: sadness, anger]) between–within mixed ANOVA revealed the expected Condition × Emotions interaction, $F(2, 64)= 7.64$, $p< .001$, $\eta_p^2= .190$. As expected, simple within-group comparisons revealed that participants who were rejected because of lack of warmth reported significantly higher levels of sadness ($M= 3.02$, $SD=1.47$) than anger ($M= 2.53$, $SD= 1.07$), $F(1, 64)= 3.67$, $p= .04$, $\eta_p^2= .054$. Conversely, participants who were rejected because of lack of competence reported higher levels of anger ($M= 3.35$, $SD=1.16$) than sadness ($M= 2.45$, $SD= 1.46$), $F(1, 64)= 11.66$, $p= .001$, $\eta_p^2= .154$. Participants who were not rejected reported equal levels of sadness ($M= 1.31$, $SD= 0.54$) and anger ($M= 1.19$, $SD= 0.35$), $F(1, 64)= 0.23$, $p= .636$. See Figure 3.3.

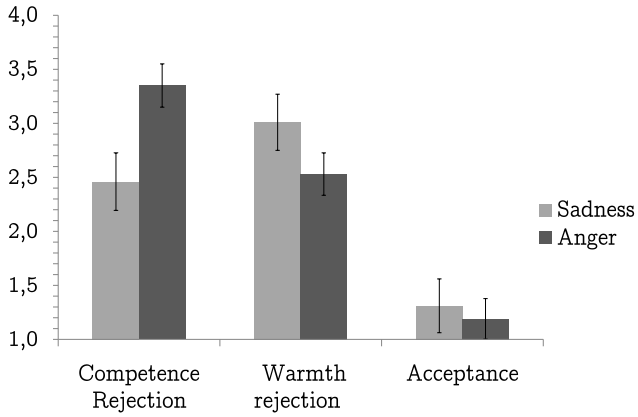

Figure 3.3: Differences between levels of sadness and anger depending on the reason of the rejection. Error bars indicate standard error of the mean (Experiment 3).

Additionally, we also performed between-group comparisons. These analyses showed that anger scores were significantly higher in the rejection due to lack of competence condition compared to the rejection due to lack of warmth condition, $F(1, 64)= 8.70$, $p= .004$, $\eta_p^2= .120$, and acceptance condition $F(1, 64)= 62.16$, $p< .001$, $\eta_p^2= .490$. Also, sadness scores were significantly higher in the warmth rejection condition compared to the acceptance condition, $F(1, 64)= 22.60$, $p< .001$, $\eta_p^2= .261$, but the difference with the competence rejection condition did not reach significance, $F(1, 64)= 2.27$, $p= .136$.

Discussion

Experiment 3 supported our predictions and showed that participants who experienced a rejection due to lack of warmth reported higher levels of sadness than anger, whereas participants who experienced a rejection due to lack of competence reported higher levels of anger than sadness. By using a very explicit form of rejection that exclusively signalled either warmth or competence as the reason for the rejection we were able to tease apart the effects of both types of rejection on emotional reactions.

Experiments 2 and 3 were based on established methods in inducing rejection. However, one could note that in these studies emotions were measured in a situation that participants did not anticipate to be excluded and were perhaps somewhat surprised. Therefore in Experiment 4 we used a different manipulation. More specifically, we asked participants to remember a situation in the past in which they were either rejected due to lack of competence or due to lack of warmth.

Experiment 4

In this study we sought to extend our findings by using a different type of manipulation. We asked individuals about actual competence and warmth-related rejections that they experienced in the past. Moreover, in the current study we also expanded the way we assessed emotional responses by asking participants to remember their emotions directly after the rejection, and after one day of reflection. We had no direct hypotheses regarding this, but wondered whether emotional responses might change over time. Finally, the present study adds to our previous studies by focusing on behavioral coping as well. Specifically, following our reasoning in the introduction – that rejected individuals will ultimately try to undo the consequences of the rejection – we expected that rejection due to perceived lack of warmth should lead to increased affiliative behavior, whereas rejection due to perceived lack of competence should lead to increased self-enhancing behavior.

Method

Participants and design

In return for course credit, 52 first year psychology students of Tilburg University (48 women; M_{age}= 19.80, SD_{age}= 1.97 years) were randomly assigned to one of two experimental conditions (competence rejection, warmth rejection). In this experiment we had no inclusion-condition.

Procedure

Participants were seated in separate cubicles and were told that the study was about how people cope with rejection. Participants were given an empty sheet of paper with 15 lines and were asked to write about a personal experience of rejection; half were asked to write about an experience that was due to lack of competence, the other half about a rejection that was due to lack of warmth.

Measures

After the writing task, participants were first asked to indicate what they thought the reason for rejection was, as a manipulation check. Specifically they did so with a checkbox containing two options: "I was rejected because I was not nice enough" and "I was rejected because I was not competent enough".

Next, we measured sadness and anger using the same two five-item scales that we used in Experiment 3, again all on 7-point scales ranging between *strongly disagree* (1) and *strongly agree* (7). Importantly, participants now rated each item twice. Specifically, they were first asked how they felt immediately after the rejection and then how they felt one day after the rejection. Reliability of these scales was good: immediate sadness, $\alpha = .88$; delayed sadness, $\alpha = .96$; immediate anger, $\alpha = .81$; delayed anger, $\alpha = .84$.

Next, we measured people's behavioral coping responses to the rejection. Affiliative behavioral coping was measured with the items "I tried to be with other people more" and "I tried to show that I am a fun and nice person" ($r = .46$, $p < .001$). Self-enhancing behavioral coping was measured with "I made an effort to prove myself" and "I tried to show that I am a competent person" ($r = .72$, $p < .001$). Both items were administered with 7-point scales ranging from *strongly disagree* (1) to *strongly agree* (7).

Finally, to be able to rule out the alternative explanation that emotional reactions are due to possible differences in how fair participants thought the rejection was, we asked participants how fair they thought the rejection was on a 7 point scale ranging from *very fair* (1) to *very unfair* (7).

Results

Preliminary analyses

Six participants did not follow experimental instructions and indicated on the dichotomous item used as the manipulation check that they wrote about the opposite type of exclusion than was specified. We excluded these participants from further analyses.

To control for the possibility that our results are due to different evaluations of how fair participants thought the rejection was, we conducted an ANOVA with rejection (competence vs. warmth) as the independent variable and perceived fairness as the dependent variable and. This analysis revealed that there was no difference in perceived fairness between a rejection due to lack of competence (M= 4.64, SD= 1.47) and a rejection due to lack of warmth (M= 5.13, SD= 1.62), F(1, 50)= 1.26, p= .267, η_p^2= .025.

Effects on immediate emotions

A 2 × 2 (Rejection [between: competence, warmth] × Emotion [within: sadness, anger]) between–within mixed ANOVA on the immediate emotion measure revealed a marginally significant Rejection × Emotion interaction effect, F(1, 50)= 3.30, p= .075, η_p^2= .062. See Figure 3.4, left pane. Within-group simple comparisons showed that participants in the rejection due to lack of warmth condition reported higher sadness (M= 5.56, SD= 1.11) than anger (M= 4.73, SD= 1.28), F(1, 50)= 8.22, p= .006, η_p^2= .141. Participants in the competence rejection condition did not report more anger (M= 4.85, SD= 1.20) than sadness (M= 4.97, SD= 0.98), F(1, 50)= 0.18, p= .673. Between-group comparisons showed that sadness was significantly higher in the rejection due to lack of warmth condition compared to the rejection due to lack of competence condition, F(1, 50)= 4.19, p= .046, η_p^2= .077. Anger did not differ significantly between the two conditions, F(1, 50)= 0.13, p= .722.

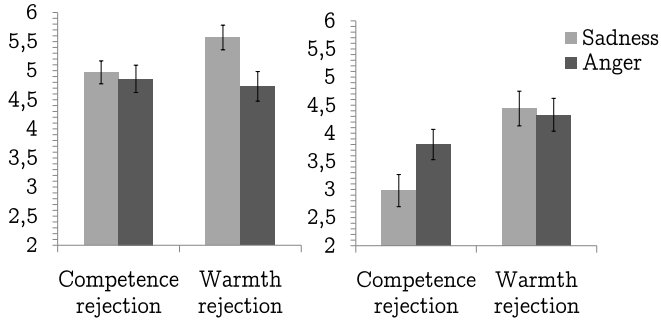

Figure 3.4: Differences between levels of sadness and anger in response to a recalled competence and warmth rejection, immediately (left figure) and one day after the rejection (right figure) (Experiment 4).

Effects on delayed emotions

A second 2 × 2 (Rejection [between: competence, warmth] × Emotion [within: sadness, anger]) between–within mixed ANOVA on the delayed emotion measure, revealed again a marginally significant Rejection × Emotion interaction effect, $F(1, 50)= 3.48$, $p= .068$, $\eta_p^2= .065$. See Figure 3.4, right pane. Within-group simple comparisons now showed that participants in the competence rejection condition reported significantly higher anger ($M= 3.80$, $SD= 1.33$) than sadness ($M= 2.97$, $SD= 1.35$), $F(1, 50)= 5.79$, $p= .020$, $\eta_p^2= .104$. Participants in the warmth rejection condition now did not report more sadness ($M= 4.44$, $SD= 1.68$) than anger ($M= 4.33$, $SD= 1.53$), $F(1, 50)= 0.10$, $p= .753$. Between-group comparisons showed that sadness was significantly higher in the rejection due to lack of warmth condition, compared to the rejection due to lack of competence condition, $F(1, 50)= 12.04$, $p= .001$, $\eta_p^2= .194$. Anger again did not differ significantly between the two conditions, $F(1, 50)= 1.75$, $p= .192$.

Effects on behavioral coping

A 2 × 2 (Rejection [between: competence, warmth] × Behavior [within: affiliative behavior, self-enhancing behavior]) between–within mixed ANOVA yielded the expected Rejection × Behavior interaction effect, $F(1, 50)= 5.27$, $p= .026$, $\eta_p^2= .096$. However, non of the simple comparisons reached significance, except for a marginally significant effect of condition for affiliative behavior, $F(1, 50)= 3.56$, $p= .026$, $\eta_p^2= .066$. Affiliative behavior appeared higher among participants who recalled a warmth rejection ($M= 4.44$, $SD= 1.20$), compared to participants who recalled a competence rejection ($M= 3.70$, $SD= 1.57$). See Figure 3.5.

Discussion

In this study, using a selective recall manipulation, we found temporal differences in sad and angry reactions to recalled warmth and competence rejections. Sadness (more than anger) appeared to be an immediate reaction to rejection due to lack of warmth, while anger (more than sadness) appeared to be a more delayed reaction to rejection due to lack of competence. It has to be noted that, although anger was higher than sadness in the competence rejection (as recalled for one day after the rejection), it was not higher than in the warmth rejection condition. It is possible that when people have to rely on their memory they have more difficulty teasing apart when they exactly felt which emotion. Compared to online reports on emotions, retrospective reports on emotions can be more biased due to their relatively higher semantic and decontextualized nature (Robinson & Barrett, 2010; Robin-

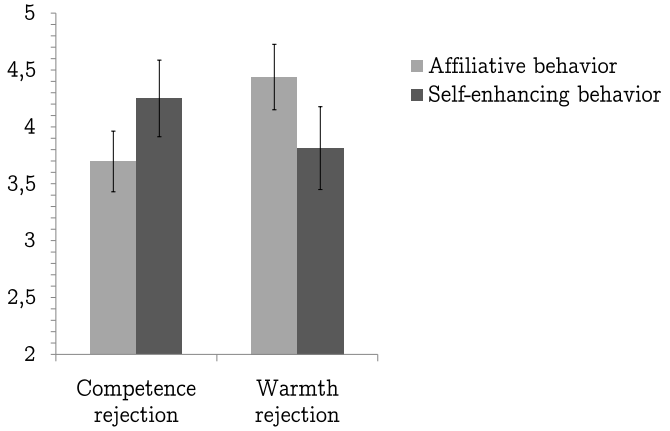

Figure 3.5: Differences between self-reported affiliative behavior and self-assertive behavior after a real life competence and warmth rejection. Error bars indicate standard error of the mean (Experiment 4).

son & Clore, 2002). Nonetheless, for both warmth and competence rejections the expected emotion patterns emerged – for warmth immediately after the rejection, and for competence one day after the rejection. Finally, although tentative because the effect was only marginally significant, the present study extended beyond the previous studies by showing an effect on behavioural coping: a warmth-rejection seemed to increased affiliative behaviour more than a competence-rejection.

General Discussion

Three studies consistently show that perceptions of warmth and competence judgments in social rejection explain the emotional reactions to rejection. In Experiment 2 a confederate rejected (or accepted) participants for ambiguous reasons (suggesting it was due to either lack of warmth or lack of competence). Among those who were rejected, misperceptions of incompetence predicted anger, and misperceptions of coldness (lack of warmth) predicted sadness. Among those who were not rejected these effects were absent. In Experiment 3 and 4 we manipulated perceptions of competence and warmth judgments. In Experiment 3, participants who were explicitly rejected because they were not warm enough were more sad than angry, while participants who were explicitly rejected because they were not competent enough were more angry then sad. The same effect occurred when people were reminded of such experiences in Experiment 4. Participants recalled reacting with higher (immediate) sadness to a warmth-based rejection, and with

higher (delayed) anger to a competence-based rejection.

It is striking to what degree a warmth-rejection selectively increased feelings of sadness and not feelings of anger – especially in Experiment 3. After all, in Experiment 3 participants did not have any meaningful exchange with their supposed partner, whom they did not even meet, and whose behavior was scripted and purely determined by experimental condition. The rejection thus objectively lacked any legitimacy; participants were objectively not colder or warmer than any other participant. Hence, participants could have concluded that their partner's behavior was more indicative of his/her prejudice and arrogance, than of their own (lack of) warmth or competence. Objectively, the warmth-rejection showed that the confederate is a smug. It did not tell anything about the participant. Yet despite all this, respondents reacted by showing primarily sadness. Why were they not angrier? These results can be explained by going back to our theoretical model. They make sense from a functional perspective on emotions. Our findings are even more compelling considering recent research suggesting that women are ascribed higher warmth and men are ascribed higher competence (Fiske, Cuddy, Glick, & Xu, 2002). One could hypothesize that women should be more upset by warmth rejections than competence rejections (the opposite holds for men), due to socialization processes. However, note that our sample consisted mainly of women and still we found strong reactions on competence rejections in the predicted direction. Thus despite specific gender roles that prescribe anger as a less acceptable emotion for women than for men, a competence rejection still leads to considerable levels of anger among our female participants. These findings are in line with social-functional accounts of emotions as a means of coordinating social interactions and relationships (Averill, 1992; Tooby & Cosmides, 2008); sadness evokes sympathy in others and is ultimately directed at restoring likeability and warmth, while anger evokes fear in others and is ultimately directed at restoring respect and status (Keltner & Gross, 1999; Keltner & Haidt, 1999; Shaver et al., 2001; Tiedens, 2001). Our findings demonstrate that in a rejection situation people are very sensitive to information that may indicate that they are seen as either incompetent or cold. Even when this information is presented without explicit labels (as in Experiments 2 & 3), it is quickly processed and seems to effortlessly lead to the discrete emotional reactions that, we assume, may be functional in that setting. In sum, responses to social exclusion seem to fit in the toolbox of automaticity that allows us to efficiently and effortlessly navigate the social world (Bargh & Chartrand, 1999).

Strengths and limitations

We believe that the three studies reported here offer converging validity for our predictions, due to their different methodologies. The advantage of Experiment 2 was that participants were never explicitly asked why they thought they were rejected. Neither were they told that they may lack warmth or competence. In fact, the words warmth and competence were never mentioned. Participants were all given exactly the same ratings on traits such as likeable and sympathetic, and on traits such as wise and sensible. Simply by inferring their perceptions, by looking at the recalling errors that participants made, we were able to predict their emotional reactions. In comparison, Experiments 3 and 4 offered the advantage of experimental control. Here, we unambiguously induced either a rejection due to lack of warmth, or a rejection due to lack of competence. Between these two studies, Experiment 3 had the advantage that it offered the highest experimental control, while Experiment 4 offered the advantage of measuring the effects of actual experiences of rejection, occurring outside the lab, without confounding these effects with expectancy violations. Despite the this variety in experimental techniques, all studies showed the same basic effect: the emotional effects of social rejection crucially depend on how that rejection is perceived; as due to lack of warmth, or as due to lack of competence.

A potential limitation is that we focused on emotions and recalled behaviour as dependent variables. We did not measure actual behavior. However, our main aim was to show that social rejection at the level of emotions has an initial 'corrective' effect on individuals (at least in healthy individuals); individuals who are rejected because they are (seen as) cold experience emotions directed at becoming and being seen as nicer individuals, whereas individuals who are rejected because they are (seen as) incompetent experience emotions directed at becoming and being seen as more competent. This is an important finding because it puts the idea that rejection leads to anti-social behavior in perspective (see also, Elshout, Van Beest, & Nelissen, 2012). Additional research is needed to identify the conditions under which these initial emotional responses to rejection result in adaptive and inadaptive behaviors, such as making amends (adaptive) vs. becoming overly dependent and needy (inadaptive) in case of sadness, or working harder (adaptive) vs. using excessive aggression to be recognized (inadaptive) in case of anger.

One might contend that in real life rejections are often for both reasons. Future research could focus on this issue. Our first study reflects real life experiences of rejection quite well, in that both reasons for rejection were equally possible. As one would expect, we found a mixture of anger and sadness. However, with statis-

tical modeling it became apparent that these emotions have different antecedents in terms of appraisal of the rejection. Regardless of antecedents of these emotions it is interesting to speculate about emotional and behavioural responses following a rejection on both dimensions. Would people perhaps feel powerless as they are negatively evaluated on both dimensions, and would this perhaps lead to aggression? Another interesting question is whether it would make a difference if the reason for rejection is not made explicit, and people have to rely on their gut feeling. Because in daily life people not always verbalize their reasons for rejecting or ignoring someone it would be interesting to see whether people can also distinguish between competence and warmth rejections when the message is conveyed non-verbally.

Finally, we have exclusively focused on anger and sadness. We did so by explicitly using the items anger and sadness in Experiment 2. In Experiment 3 we expanded our anger measurement with other externalizing emotions (hostility, annoyance, irritation and insult), and our sadness measurement with other internalizing emotions (gloomy, plaintive, down and lonely). But emotions that are on a different dimension than the internalizing-externalizing dimension, for example on the approach-avoidance dimension, could be equally interesting to investigate. For example the emotion of fear elicits approach-based responses from others (Marsh, Ambady, & Kleck, 2005) and as such would be expected to follow after a warmth rejection. This is an interesting venue for future research.

Relationship to literature

The present work adds to previous lines of research that have distinguished between different experiences of rejection. For example the *Multi-motive model* (Richman & Leary, 2009) specifies parameters in the broader social circumstances surrounding the experience of the rejection, and describes the source and the implications of the rejection as predictors of different responses to a rejection. In line with this model Buckley et al. (2004) hypothesized that angry reactions would be most intense after being rejected by someone who gradually becomes increasingly negative over the course an interaction (because of the loss of pride induced by a rejection following initial acceptance), whereas sad reactions would be most intense following a constant rejection because of the feelings of helplesness that constant rejection causes. Contrary to their expectations however, their results indicated that a rejection following initial acceptance (compared to a rejection by someone who is non-accepting from the beginning of an interaction) lead to *both* more anger and sadness. The authors speculated that the particular pattern of

emotional reactions to a rejection episode might be determined by an individual's appraisals regarding the event. Our findings support their speculation and show that the specific pattern of angry and sad reaction that people show in response to a rejection can indeed be explained by their perceptions of the reason of the rejection.

Previously, Leary, Koch and Hechenbleikner (2005) made an elaborate argument for the role of appraisals in the experience of rejection as well. They argued that the experience of rejection stems basically from the experience of one's declining relational value. In their view acceptance and rejection can be considered opposite endpoints of a continuum of relational evaluation. Moreover, the authors argue that differing emotional responses to social rejection – sadness, hurt feelings, loneliness, guilt, shame, embarrasment, jealousy, and anxiety – are adaptive action tendencies in response to a perceived drop in relational value. Accordingly, one's emotional reactions and accompanying behaviors after a rejection depend on one's specific perceptions of one's relational value. Our findings add detail to the reasoning of Leary and his colleagues (2005), in that we suggest that an individual's relational value has two components: one's perceived warmth and one's perceived competence. Moreover, distinguishing between these two components might shed light not only on sadness and anger, but also on other emotions that arise in response to rejection.

Our idea that anger and sadness are specific emotional reactions to rejection depending on the appraisal of the reason of the rejection, could also be linked to the *Needs threat model* (Williams, 2009). According to this model peoples' responses to rejection not only depend on the extent that they feel that their belongness is threatened, but also on the extent that they perceive threats to other fundamental psychological needs: self-esteem, a sense of purpose in life, and control. The model does not make the same distinction between sad and angry reactions as we propose, but it does predict that aggression (as opposed to prosocial behavior) is most likely to follow when a rejection threatens the need for control (see also, Warburton et al., 2006). If we were to link anger to aggression, we could derive from the above that a rejection based on lack of competence must be a bigger threat to the need for control, than a rejection based on lack of warmth, since the former evokes greater anger. But we agree with the *Needs threat model* that the threat the rejection poses to one's sense of control, and the resulting aggression, primarily results from the feeling that one cannot alter or regulate one's outcomes in life. According to the model the very experience of rejection, especially when it is unfair, unexpected or chronic, deprives an individual of control, because one is not able to prevent the rejection from happening. Importantly, this means that a sense of control

could be threatened by warmth rejections as well. Therefore, in parallel to our above argument concerning peoples' relational value, we argue that one may not only obtain a sense of control through achieving status and respect due to one's (real or acclaimed) competence, but also through achieving love/liking and trust by sharing and cooperating. Consequently, in our view, the role of need for control in (emotional) responses to rejection is to build social bonds (Maner et al., 2007), and to direct our efforts toward increasing one's relational value as a competent and warm individual. It is only when a rejection deprives the individual from repairing one's relational value, that it evokes aggression and destructive behavior (and eventually desolation and social withdrawal). As such we would like to stress that we view the anger evoked by competence rejections in our experiments not as an action tendency to aggress, but rather as the motivation to repair one's relational value as a competent individual.

For our studies we have drawn upon knowledge from the fields of person perception and emotion research. But these fields of research could benefit from our approach as well. Our studies demonstrate that the induction of social rejection is effective in inducing meaningful processing of socially relevant information (Sacco, Wirth, Hugenberg, Chen, & Williams, 2011); they also demonstrate the effectiveness of social rejection in eliciting specific emotions. The stereotype content model, which also relies on the distinction between warmth and compentence, describes that individuals feel distinct emotions (pity, envy, contempt and admiration) towards others depending on how they appraise them on their competence and warmth. For example, stereotyped individuals considered as warm, but lacking competence evoke primarily pity, whereas stereotyped individuals who are considered lacking both warmth and competence evoke primarily contempt (Fiske et al., 2002). Our results could be a first steppingstone for researchers interested in how appraisals shape not only the emotions of the person who engages in the appraisal, but also of the person whom these appraisals concern. Implementing social rejection manipulations into person perception and emotion research could thus be a fruitful way in further investigating the interpersonal consequences of warmth and competence judgments, but also the mechanisms behind emotions.

Conclusion

To conclude, the work reported here shows that applying social perception research and emotion research in investigating social rejection offers us a better understanding of social rejection and its downstream effects. It shows that not all experiences of social rejection are alike. Understanding how people feel after an experience of

social rejection requires a detailed understanding of the reason of the rejection.

Chapter 4

Non-verbal expressions of reasons for rejection

The studies in *Chapter 3* showed that rejected individuals differentiate between competence and warmth rejections with specific emotional reactions: rejections conveying a negative apraisal of competence evoked more anger than sadness, whereas rejections conveying a negative appraisal of warmth evoked more sadness than anger. The present chapter explored how judgments of competence and warmth are communicated non-verbally during a face-to-face selection. I expected that targets excluded in the selection (compared to targets included in the selection) would be more sensitive to the specific non-verbal cues of negative competence and warmth appraisals. Based on observations from the targets of the selection, results across two studies showed that selections based on competence were done more dominantly than selections based on warmth. Selections based on warmth, on the other hand, were done more coldly compared to selections based on competence. Contrary to expectations, being excluded in the selection did not enhance the sensitivy to dominance and coldness; excluded and included targets assigned equal levels of dominance and coldness to selectors. Additionally, the results provided partial replication of the specificity of angry and sad reactions to competence and warmth rejections reported in the previous chapter. Targets who were rejected on warmth in the selection experienced more sadness than anger. And targets who were rejected on competence experienced more anger than targets who were rejected on warmth.

This chapter is adapted from:

Çelik, P., Van Beest, I. & Lammers, J. (2014). Understanding Non-verbal Expressions of Competence and Warmth Judgments in Social Rejection. *(Submitted)*

Introduction

In the past 15 years the field of social psychology has acquired many insights in the human response to social rejection. The method of research has been mainly focussed on comparing the impact of a non-specific rejection experience to an inclusion, or non-rejection experience in controlled experimental settings (for reviews see, Gerber & Wheeler, 2009; Leary, Twenge, & Quinlivan, 2006; Williams, 2007a; Williams, 2007b). Recently Çelik, Lammers, et al. (2013) have argued that, seeing the various responses to rejection reported in the literature, the experience of being rejected may be a multifaceted phenomenon, and responses to it may vary with the perceptions that people can have about the reason of why they were rejected. After all, there is no instance of social exclusion that occurs without some form of social motivation or social judgment; people accept and reject others based on specific perceptions and judgments of them, with the aim of correcting certain behaviors in the individual (Kurzban & Leary, 2001). Yet not all acts of rejection are explicit in communicating the reason to the individual. In some circumstances people are simply ignored (i.e. ostracized) and only receive implicit indications of their lack of social fit without being given an explicitly verbalized reason. The purpose of the present chapter is to explore how the social appraisals that may precede a rejection are communicated implicitly.

We present two studies with a relatively naturalistic approach, in which participants are included or excluded for warmth or competence reasons, face-to-face with the person who engages in the selection. We examine whether perceptions of lack of competence and lack of warmth are accompanied by specific non-verbal cues in de behaviour of the selector, and whether rejection moderates the sensitivity to these cues.

Warmth and Competence Evaluations in Social Rejection

Rejection research typically does not investigate the social evaluations that precede a rejection. Recently there has been attention for the reasons of rejection and how they may impact peoples' responses (Çelik, Lammers, et al., 2013). Based on existing theoretical models Çelik, Lammers, et al. (2013) proposed that people judge, reject and include others along two primary dimensions: warmth and competence (Asch, 1997; Bales, 1970; Leary, 1957). Warmth and competence have been identified in the literature as core and universal components of interpersonal perception (Abele & Wojciszke, 2007; Cuddy et al., 2008; Fiske et al., 2007). Studies show that 82 % of the variance in everyday perceptions of others can be accounted for by judgments pertaining to warmth and competence (Wojciszke,

2005; Wojciszke et al., 1998). When people evaluate others on competence they focus on characteristics such as skill, creativity, intelligence and foresight, whereas when they evaluate others on warmth they focus on characteristics such as friendliness, sincerity, helpfulness, and trustworthiness (Cuddy et al., 2008; Fiske et al., 2007). Thus evaluating another person on competence involves determining whether someone is capable or incapable, whereas evaluating someone on warmth, involves determining whether someone is a friend or a foe. This also means that a competence evaluation inherently involves rank and superiority-inferiority, and that perceiving someone as incompetent involves appraisals of disrespect and seeing oneself as superior to the other. A negative warmth evaluation, on the other hand, involves appraisals of dislike and distrust, and does not involve rank.

In their studies Çelik, Lammers, et al. (2013) demonstrate that individuals respond with different emotions to rejections based on perceptions of lack of competence and rejections based on perceptions of lack of warmth. In two studies they showed that rejected individuals respond with primarily anger (and less sadness) to a competence rejection and primarily sadness (and less anger) to a warmth rejection. The authors explained their findings by referring to the functional aspects of these emotions (Ekman, 1992; Frijda, 1987; Frijda et al., 1989; Keltner & Gross, 1999; Keltner & Haidt, 1999; Van Kleef et al., 2010; Zeelenberg et al., 2008). Sadness elicits specific intra-individual action tendencies and responses from others which together increase one's chances to be seen as a warm individual, whereas anger elicits intra-individual action tendencies and responses from others which together increase one's chances to be seen as a competent individual. The reason of the rejection thus seems to evoke action tendencies that may be functional in restoring aspects of oneself that lead to the rejection. Importantly, in one of their studies participants received an ambivalent reason for the rejection (the reason could be both warmth and competence), and the same emotional response patterns emerged depending on peoples' interpretation of how they were evaluated by their rejecter. Thus even in situations in which the reason of the rejection is difficult to discern, peoples' responses to the rejection seem to be attuned to the possible reasons.

It follows from the above that information regarding the reason of a rejection is very important for rejected individuals. This is not surprising since this information could enable them to respond in a way that may potentially regain them acceptance on the specific domain that they were rejected. Studies show that social rejection typically leads to a drop in self-esteem, suggesting that people worry about how they look in the eyes of their rejecter and others (Leary, Cottrell, & Phillips, 2001; Van Beest & Williams, 2011; Zadro, Williams, & Richardson, 2004).

Possibly this drop in self-esteem is a signal that motivates rejected individuals to repair their connectedness by working on their shortcomings that led to the rejection in the first place. Indeed, one of the main functions of social rejection, from the perspective of the rejecter, is to correct unwanted behavior and avoid poor social exchange partners (Kurzban & Leary, 2001). For example, in job interviews applicants may receive an explanation for why they were rejected for the job, or in romantic relationships lovers may critisize their partner in the hopes that he or she will change.

Expressing competence and warmth appraisals

Seeing the importance of the reason of a rejection, both from the perspective of the rejecter, and from the perspective of the target of the rejection, it is interesting that in daily life people often do *not* verbalize why they ignore or reject someone. This may be for several reasons, for example because the individual who engages in the rejection wants to avoid an awkward situation, or because he or she wants to spare the person's feelings. Often people use subtle expressions of disinterest like frowning, lack of eye contact, distant body language and avoiding, instead of explaining their reasons explicitly. Supporting this idea a survey study indicated that people withhold eye contact as a way to exclude others (Williams, Shore, & Grahe, 1998). Imagine for example that you have a friendly neighbour who offers his help in fixing your car. Your neighbour however has two left hands and you believe that entrusting him with your car would surely end in a disaster. But since he is your neighbour, you might not want to explicitly tell him that you think he is clumsy and incompetent. Instead you avoid him, and when you do encounter him, you try to keep the conversation short. Often instances of rejection are of this kind; they are subtle (not explicitly verbalized) and they do not involve a clear unambiguous act of full irrevocable rejection. But if rejection has a corrective function, how do we let others know why we ignore or reject them in the instances that we do not tell them verbally?

To our knowledge there is no literature that specifically focusses on how exactly individuals convey the reasons behind a rejection. One exception is a theoretical paper by Kerr and Levine (2008) who argue that the non-verbal expressions of ostracism have evolutionary origins. Building on their reasoning, we argue that peoples' appraisals of others' competence and warmth preceding a rejection are likely to be accompanied by subtle, non-verbal behavioral cues as well. Furthermore, Kerr and Levine (2008) argue that people determine other peoples' evaluations of them by attending to the same cues that they themselves send out when

evaluating others. In line with this idea, Leary, Koch and Hechenbleikner (2005) state that human beings have developed biopsychological mechanisms to fear and avoid rejection, characterized by an aversion and sensitivity to cues of rejection and abandonment. For example, diary data suggest that even when strangers fail to engage in eye contact, people feel ostracized (Williams, Govan, Wheeler, & Nezlek, 2004). A recent field experiment conducted by Wesselmann, Cardoso, Slater, and Williams (2012) added to these findings by showing that pedestrians who were given an 'air-gaze' by a confederate passing by (i.e., the confederate looked in their direction, but did not give them direct eye-contact) indicated to feel more socially disconnected, than pedestrians who did receive acknowledgement from the confederate (either through neutral eye-contact, or through eye-contact with a smile). Importantly, excluding participants who had been aware of the eye-contact from the analyses (45%) resulted in a null-finding, indicating the importance of awareness of the eye-contact for the found effect. Perhaps not surprisingly, studies suggest that for an observer a non-verbal message carries more than 4 times the weight of a verbal message (Argyle, Salter, Nicholson, Williams, & Burgess, 1970).

Because of the vertical/hierarchical nature of competence relations, we expect that disrespect and perceptions of low competence should be expressed with a superior and dominant demeanor, because dominance communicates an individual's (real or acclaimed) superior level of knowledge and competence (Hawley, 1999). In other words, when people feel capable and superior, they feel dominant (Maslow, 1943). Because of the horizontal nature of warmth relations, we expect that dislike, distrust and perceptions of low warmth, i.e. coldness, should be expressed with a distant and cold demeanor. These predictions are consistent with interpersonal circumplex theorists who posit that along the vertical axe (the dominance/power axe) peoples' behavior are often opposite to their interaction partners' behavior, while on the horizontal axe (the love/affiliation axe) their behavior is often similar to their interaction partners' behavior (Kiesler, 1983). Thus, perceptions of inferiority are often met with expressions of superiority, while perceptions of coldness are often met with expressions of coldness.

Dominance and coldness from the perspective of observers

Expressions of dominance and coldness may be part of a dynamic process between the sender and the individual to whom this behavior is targeted (Strong et al., 1988). For example, according to Henley (1977) the expression of dominance not only signifies the power relationship between individuals, it can also establish a competitive situation in which two individuals may seek dominance over one

another. For example, communicating dominance may elicit anger in the target in return, especially when it is accompanied with hostility (Orford, 1986). Likewise, the perception of coldness in the behavior of the sender may elicit sadness or fear in the target (Knutson, 1996). These emotions in turn may facilitate further adaptive behaviors (Frijda, 1987) depending on the individuals' motivations in interaction with the specific relationship between the individual and the other person; the anger in response to dominance may for example facilitate gaining respect and competence, whereas the sadness in response to coldness may facilitate gaining warmth and caring (Leary, Koch, & Hechenbleikner, 2005; Çelik, Lammers, et al., 2013). Because people not always verbalize their opinions and appraisals of others, and because competence and warmth judgments make up a large part of peoples' opinions about one another (Wojciszke, 2005; Wojciszke et al., 1998), targets of these appraisals should be highly motivated and skilled to recognize the non-verbal expressions of dominance and coldness. But what if an evaluation of competence or warmth leads to a rejection? Can rejected targets still correctly recognize dominance and coldness in the behavior of their rejecter?

The literature offers contradictory predictions regarding rejected individuals' ability to detect cues of dominance and coldness. On the one hand there are studies that suggests that rejected individuals may not even be interested in understanding why they are rejected. Several studies show that rejection causes aggressive and antisocial behavior (Leary, Twenge, & Quinlivan, 2006; Twenge, Baumeister, Tice, & Stucke, 2001). Other studies show that rejection is such a negative experience that people would probably not be able to process the non-verbal behavior of others, let alone of their rejecter. Studies for example show that rejected individuals do not seem to process mitigating social information. For example, rejected individuals do not take into account factors like the social categorization of the rejecters (Eisenberger & Lieberman, 2004; Gonsalkorale & Williams, 2007; Van Beest et al., 2012; Williams & Sommer, 1997; Zadro et al., 2004) or the incentives of the rejecters (Lelieveld et al., 2013; Van Beest & Williams, 2006; Williams et al., 2000); in all of these cases the pain of rejection seems unmitigated. Other research shows that ostracism distorts peoples' view on reality and altogether blocks their ability to process and understand social reality. Baumeister et al. (2002) showed across three experiments that an experimental induction of rejection impaired logical reasoning and executive functioning. Thus, it is possible that rejected observers compared to non-rejected observers, will be impaired in recognizing non-verbal expressions of negative competence judgments (dominance) and negative warmth judgments (coldness).

On the other hand, there is a growing body of research that shows that rejected

individuals, compared non-rejected or included individuals, might be even more sensitive to the non-verbal behaviour of their rejecter. For example, a recent study shows that rejection increases peoples' sensitivity in differentiating Duchenne (real) smiles from non-Duchenne smiles (Bernstein, Young, Brown, Sacco, & Claypool, 2008). Other studies show that rejected individuals have increased attention to others' eye gaze (Wilkowski, Robinson, & Friesen, 2009), smiles (DeWall, Maner, & Rouby, 2009), vocal tone and facial emotion (Pickett et al., 2004), facial expressions (Gardner, Pickett, & Knowles, 2005), and social information in general (Gardner, Pickett, & Brewer, 2000; Hess & Pickett, 2010). Moreover, social rejection seems to increase mimicry (Lakin et al., 2008). It is conceivable that mimicry is one of the processes through which rejection enhances peoples' ability to understand non-verbal behavior in general, and possibly also the non-verbal behavior of their rejecter.

Based on the above we expect that rejected individuals will be more sensitive to recognize the non-verbal expressions of dominance and coldness in their rejecter, than non-rejected observers. If this is the case, it may be that in parallel, rejected individuals' emotional responses will differentiate between warmth and competence rejections as well, similar to findings previously reported by Çelik, Lammers, et al. (2013). Thus competence rejections might primarily evoke anger (and less sadness), while warmth rejections might primarily evoke sadness (and less anger).

Study overview and hypotheses

We used a paradigm in which some participants were excluded and others were included in a face-to-face group selection by the same individual – the 'selector'. Following random assignment, selectors were either instructed to base their choice on their personal perceptions of the targets' competence, or on their personal perceptions of the targets' warmth. The main dependent variables were targets' perceptions of the selectors' dominance and coldness during the selection procedure and their emotional reactions to the selection outcome (sadness and anger). We expected that selectors who based their decision on a perceived lack of warmth would be rated as more cold than selectors who based their decision on a perceived lack of competence. Conversely, we expected that selectors who based their decision on a perceived lack of competence would be rated as more dominant, than selectors who based their decision on a perceived lack of warmth. Furthermore, we expected that excluded individuals, due to their higher sensitivity to cues of rejection, should have a more exaggerated perception of the selectors' dominance and coldness, than included individuals. Finally, following the findings of Çelik,

Lammers, et al. (2013) we expected that among excluded individuals anger would be higher than sadness in response to a competence rejection, and sadness would be higher than anger in response to a warmth rejection. For included individuals we did not expect these reactions, as we consider anger and sadness to be action tendencies that are functional in response to exclusion, but not in response to inclusion.

Experiment 5

In this study we only measured dominance and not coldness because we first wanted to establish that competence and warmth rejections can indeed be distinguished from each other without making the appraisal process too difficult for the targets. We reasoned that when targets have to judge selectors' behavior on more than one dimension, they might overly rely on heuristic reasoning, which may lead to incorrect appraisals. For example, it is conceivable that that targets will infer selectors' dominance from their coldness (or vice versa), instead of assessing these behaviors independently from each other.

Method

Participants and design

In return for course credit, 124 psychology students of Tilburg University (98 women; M_{age}= 19.6 years, SD_{age}= 1.87) participated in 26 groups of four (6 groups) or five participants (20 groups) each. In each group one of the participants was randomly allocated the role of selector, and groups were randomly assigned to competence and warmth selection. This means that in the competence condition, selectors were instructed to exclude and include targets based on their competence, whereas in the warmth condition selectors were instructed to exclude and include targets based on their warmth.

Procedure

The experimenter explained that the study was about personality and group interaction, and that participants would do several group tasks together. Each session took place in a room consisting of 5 individual tables and one bigger group table. In the hallway, right outside the room, another table was placed, intended for the future selector. To bolster credibility for the cover story, participants started with filling out a bogus personality questionnaire at their individual tables. Note that at this point, participants were not aware that later one of them would make a

selection. Participants then engaged in a group task of building structure with wooden blocks. They received the following instructions from the experimenter:

> "Your assignment as a group is to build something with these blocks. There are no specific rules; it is totally up to you what you build and how you do this. But I want you to do this assignment together as a group."

The group task was intended to enable participants to form a first impression of each other. After 5 to 7 min the experimenter announced the end of the group task and asked participants to return to their individual tables. Next, everybody filled in a self- and other-rating questionnaire. This questionnaire contained several items to check for possible a priori individual differences pertaining to self and other-perceptions in the group between excluded and included individuals.

Manipulation of selection criterion. After participants were finished with filling in the self- and other-rating questionnaire, the experimenter explained to the group that only three people would be needed for the second group task, and that one of the group members would be *randomly* chosen to select two other people for the second group task. Next, by means of a lottery, one of the participants was allocated the role of 'selector' and was taken to the hallway by the experimenter. There, out of the targets' earshot, the experimenter handed the selector one of two different instruction sheets, asked him/her to carefully read the information, and then to knock on the door when ready. After this the experimenter went back into the room where the remaining group members were seated behind their individual tables. Depending on the experimental condition, the instructions for the selector explained that for the next group assignment participants should be decisive and skillful (or empathic and cooperative) and that he/she should therefore choose the two most skillful (empathic) individuals in the group. Note, that selectors decided *themselves* whom to exclude and whom to include. We did this to evoke natural and spontaneous non-verbal behavior.

Selection procedure. On average selectors knocked on the door within 30s after the experimenter returned to the room. The experimenter then let the selector into the room and guided him/her to a fixed spot facing the 4 (or 3) targets of the selection, at a distance of approximately 1-1.5 m. The selector remained in a standing position, while the targets were in a sitting position behind their individual tables. Next, the experimenter showed 2 small black cards and explained that two of the targets would receive a card from the selector, and that these two

individuals would not participate in the second group assignment[1]. After this explanation, the experimenter asked whether the selector had made up his/her mind and gave the cards to the selector – selectors had previously read on the instruction sheet to not say anything, and simply place the cards on the tables of the targets with whom they did *not* want to work with on the second assignment. All selectors followed this instruction correctly.

After the cards were placed on the tables the experimenter immediately escorted the selector back to the hallway and instructed targets to fill in the last questionnaire on their table. This questionnaire contained the assessment of the dependent variables and manipulation checks.

Measures

Self- and other ratings prior to the selection. Immediately after the group task, but before the selection, participants answered questions about themselves and their group members. This was done to check for possible a priori individual differences in self and other-perceptions between excluded and included individuals. Note that at this point participants were not aware that a selection would take place. Participants first indicated how accepted they felt in the group with the items "I feel part of the group", "I feel accepted by my group members" and "I had an equal share in the group task" (α= .78). Next, participants indicated their agreement with the items "The cooperation with my group members felt equal" and "The cooperation with my group members felt competitive". Then, participants indicated their own self-perceptions of warmth and competence with the items "During the group task I took a friendly and cooperative attitude" and "During the group task I performed well". Finally, participants indicated how warm and competent they found their group members with respectively the items "My group members seem to be friendly", "My group members seem to be nice"(r= 86, p< .001), and "My group members seem to be intelligent", "My group members seem to be sensible" (r= .67, p< .001). All items were assessed on 7-point Likert scales ranging from *strongly disagree* (1) to *strongly agree* (7).

Dependent variables. After the selection took place targets indicated the extent to which they felt sad, depressed, gloomy, down, and plaintive (composite variable "sadness"; α= .93) and angry, irritated, insulted, annoyed, and hostile (composite variable "anger"; α= .90). Next, targets rated the dominance of the selector on four items: dominant, assertive, confident and self-conscious (composite variable "dominance"; α= .76). These items were measured on 7-point Likert scales ranging

[1]In groups in which there were three targets one individual was included and two were excluded.

from *not at all* (1) to *very strongly* (7)[2].

Manipulation checks. After assessing the main dependent variables we probed for conscious awareness of the grounds of the selection – warmth or competence – by asking targets to write down any ideas they had on why they were included or excluded. None of the targets seemed consciously aware of the true reason behind the selection. Most of them indicated that they had no idea, with a few indicating that their being included or excluded was probably done according to instructions of the experimenter.

Finally, participants indicated their level of belongingness in the group with the items "I feel part of the group" and "I feel accepted by my group members" ($r = .86$, $p < .001$). These items were measured on 7-point Likert scales ranging from *strongly disagree* (1) to *strongly agree* (7).

Results

Targets who were previously acquainted with selectors were removed from analyses. This led to the removal of 20 targets, leaving a total of 78 targets, and 26 selectors. Because targets' responses were assessed in groups, their responses are statistically nested within the group sessions in which the experiment took place (Bryk & Raudenbush, 1992). When data is nested in groups, it is possible that there is significant variance at the group-level, meaning that *group means* can differ from one another on the dependent variable(s). In the present studies a large between-group variance would be undesirable, as it would mean that individual observations within the same groups are not fully independent. To check for the existence of between-group variance we used the SPSS Mixed procedure in

[2]While we assessed the dependent variables for the targets, we also asked several questions to the selectors, mainly for exploratory reasons. All questions were measured on 7-point Likert scales ranging from *not at all* (1) to *very much* (7). We assessed selectors' emotional reactions (positive emotions: relieved, relaxed, peaceful, powerful, energetic, vigorous, proud, confident; negative emotions: sad, down, plaintive, tired, drained, empty, guilty, ashamed); How dominant selectors thought they came across during the selection using the same 4 items that the targets received; Whether selectors had followed the selection instructions that they received ("How competent do you find the persons that you just choose (*rejected*)?", "How nice do you find the persons that you just choose (*rejected*)?"); How certain selectors were of their choice depending on the selection instruction ("My choice was based on a guess" (reverse coded), "My choice was based on clear ideas that I had about my group members", "I am certain of my choice").

There appeared to be no significant differences between competence and warmth selectors regarding their emotional reactions to the selection instruction. However, competence selectors seemed to perceive themselves as significantly more dominant ($M = 4.15$) than warmth selectors ($M = 2.90$), $F(1, 24) = 8.38$, $p = .008$, $\eta_p^2 = .276$. Moreover, regardless of the selection instruction, selectors evaluated included targets as more competent ($M = 5.42$) than excluded targets ($M = 4.79$), $F(1, 24) = 12.73$, $p = .002$, $\eta_p^2 = .366$, and also as warmer ($M = 5.79$) than rejected targets ($M = 5.50$), $F(1, 24) = 6.76$, $p = .016$, $\eta_p^2 = .235$. Finally, it appeared that competence selectors were more certain of their choice ($M = 4.06$) than warmth selectors ($M = 3.10$), $F(1, 24) = 4.13$, $p = .054$, $\eta_p^2 = .158$.

SPSS version 17. This procedure tests the so-called *null-model* – an intercept-only model with no predictors specified – and allows the total variance to be partitioned into between- and within-group variance, for each outcome variable separately. The results of these analyses showed that between-group variances for each of the outcome variables were smaller than .04, and non-significant (all p's $> .80$). Moreover, the proportion of the total variance that was due to between-group variance – the intraclass correlation – was negligible. Since the outcomes of a multi-level analysis would be in this case the same as the outcomes of a standard analysis of variance (Heck, Thomas, & Tabata, 2010), we conducted all analyses using standard regression and variance analysis in SPSS 17.

Manipulation checks

Belongingness. A 2 × 2 (Selection Criterion[between: competence vs. warmth]) × Selection Outcome[between: included vs. excluded]) ANOVA with belongingness scores as the dependent variable, revealed a main effect of Selection Outcome, $F(1, 74)= 17.59$, $p< .001$, $\eta_p^2= .192$. As expected, excluded targets felt less belonging ($M= 4.51$, $SD= 1.40$) than included targets ($M= 5.62$, $SD= 0.91$). There was no main effect of Selection Criterion, $F(1, 74)= 1.13$, $p= .291$, nor was there an interaction effect, $F(1, 74)= 0.98$, $p= .326$.

Self- and other-perceptions prior to selection. Because allocation to exclusion and inclusion conditions was not random, several independent samples t-tests with Selection Outcome as the between-subjects variable were conducted to check whether self- and other-perceptions prior to the selection differed significantly between excluded and included individuals. These analyses revealed only one significant effect: excluded participants scored significantly lower on other-perceptions of competence ($M= 5.57$, $SD= 0.62$) than included participants ($M= 5.90$, $SD= 0.74$), $t(76)= 2.07$, $p= .042$ (two-tailed). This suggests that, on average, those targets who compared to other targets thought that their group members were less competent, were more likely to get rejected. None of the other analyses produced significant differences between excluded and included targets. See Table 4.1.

Main analyses

Perceptions of dominance. A 2 × 2 (Selection Criterion [between: competence vs. warmth] × Selection Outcome[between: included vs. rejected]) ANOVA was

Table 4.1: General, self- and other-perceptions prior to the selection (Experiment 5).

	Excluded M (*SD*)	Included M (*SD*)	*t* (76)	*p*
General perceptions of acceptance	5.66 (*1.03*)	5.93 (*0.80*)	1.32	.190
General perceptions of competition	2.46 (*1.58*)	2.14 (*1.30*)	- 0.97	.333
General perceptions of equality	5.80 (*1.12*)	5.84 (*0.75*)	0.18	.861
Self-perceptions of warmth	5.48 (*0.96*)	5.78 (*0.85*)	1.42	.161
Self-perceptions of competence	5.09 (*0.92*)	5.12 (*1.43*)	0.11	.913
Other-perceptions of warmth	6.11 (*0.79*)	6.31 (*0.74*)	1.15	.253
Other-perceptions of competence	5.57 (*0.62*)	5.90 (*0.74*)	2.07	.042

conducted with dominance scores as the dependent variable[3]. This analysis yielded a marginally significant main effect of Selection Criterion, $F(1, 74)= 3.46$, $p= .067$, $\eta_p^2= .045$, which was qualified by a marginally significant Selection Criterion × Selection Outcome interaction-effect, $F(1, 74)= 3.20$, $p= .078$, $\eta_p^2= .041$. Selection Outcome had no significant effect on dominance scores, $F(1, 74)= 1.99$, $p= .162$, $\eta_p^2= .026$.

Simple comparison tests revealed that included targets assigned higher dominance to competence selectors ($M= 3.45$, $SD= 1.06$) than to warmth selectors ($M= 2.46$, $SD= 1.19$), $F(1, 74)= 10.56$, $p= .008$, $\eta_p^2= .090$. Included targets also assigned lower dominance to warmth selectors than excluded targets did, $F(1, 74)= 5.49$, $p= .022$, $\eta_p^2= .069$. Excluded targets, however, did not assign higher levels of dominance to competence selectors ($M= 3.36$, $SD= 1.30$), compared to warmth selectors ($M= 3.33$, $SD= 1.25$), $F(1, 74)= .003$, $p= .962$. Thus, con-

[3]All of the sessions were filmed as well to obtain an outsider's perspective on the the selectors' behavior. The camera was zoomed in on the selector, but participants were led to believe that the whole group was being filmed. All of the participants gave their consent for filming. Two independent raters, blind to experimental condition, watched all 26 video fragments (each lasting between 1 and 1.5 min, showing a full body image of the selector entering and placing the cards on the tables, and leaving the room). We had no a priori hypotheses regarding this measure. We deemed it possible that raters would be unable to correctly decode the non-verbal behavior of the selectors, due to the relatively short lenght of the video fragments. Dominance (feet/shoulder width, general body expansiveness, intrusive hand gestures and overall dominance), and coldness (body orientated towards targets, openness of body, eye contact, duchenne smile and overall warmth) (Gifford, 1991), were coded on 7-point Likert-scales, with higher scores indicating higher dominance and higher coldness (after reverse coding the coldness items). Only the feet/shoulder width and general body expansiveness for dominance, and body orientation, eye contact and overall warmth for coldness reached acceptable interrater consistency (Shrout & Fleiss, 1979), with interrater correlations of >.30 (fair agreement or higher; Landis & Koch, 1977). These items were combined into new variables, respectively "dominant behavior" and "cold behavior". A 2 × 2 (Selection Criterion[between: warmth vs. competence) × Behavior[within: dominant behavior vs. cold behavior]) between–within mixed ANOVA, revealed no significant effects (p's> .174).

trary to our expectations, while included targets did recognize the relatively more dominant behavior of the competence selectors compared to the warmth selectors, excluded targets seemed unable to do this. See Figure 4.1.

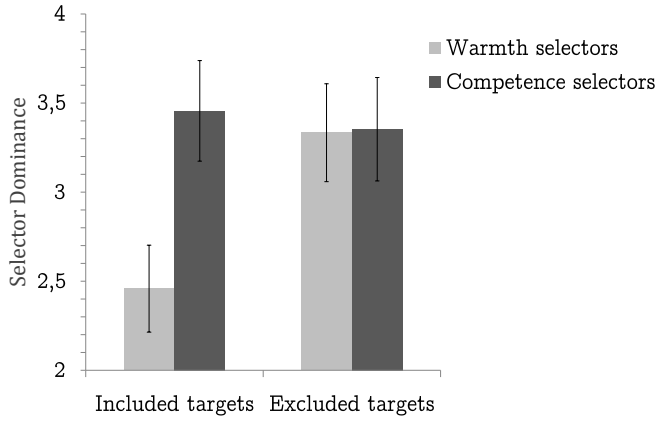

Figure 4.1: Included targets assigned higher dominance to competence selectors compared to warmth selectors. Excluded targets did not make this differenatiation (Experiment 5). Error bars indicate standard error of the mean.

Emotions. A 2 × 2 × 2 (Selection Criterion[between: competence vs. warmth] × Selection Outcome[between: included vs. rejected]) × Emotion[within: sadness vs. anger]) between–within mixed ANOVA was conducted. The analysis revealed a main effect of Selection Outcome, $F(1, 74)= 31.12$, $p< .001$, $\eta_p^2= .296$, with excluded targets reporting higher sadness and anger ($M= 2.21$, $SD= 1.10$) than included targets ($M= 1.30$, $SD= 0.49$). This effect was qualified by a marginally significant Selection Criterion × Emotion interaction, $F(1, 74)= 3.49$, $p= .066$, $\eta_p^2= .045$. However, non of the simple effects were significant, except for a marginally significant effect of Emotion among participants excluded on warmth; they reported more sadness ($M= 2.39$, $SD= 1.05$) than anger ($M= 2.04$, $SD= 0.91$), $F(1, 74)= 3.22$, $p= .077$, $\eta_p^2= .042$. The Selection Criterion × Selection Outcome × Emotion effect was not significant, $F(1, 74)= 1.14$, $p= .239$. See Table 4.2 for all means.

Experiment 6

The results of Experiment 5 showed that included targets differentiated between selectors who were instructed to base their decision on the competence of targets ('competence selectors') and selectors who were instructed to base their decision

Table 4.2: Sadness and anger among included and excluded targets (Experiment 5).

	Sadness M (*SD*)	Anger M (*SD*)
Warmth Inclusion	1.36 (*0.64*)	1.20 (*0.39*)
Competence Inclusion	1.34 (*0.46*)	1.31 (*0.46*)
Warmth Exclusion	2.39 (*1.20*)	2.04 (*1.17*)
Competence Exclusion	2.09 (*1.11*)	2.32 (*0.87*)

on the warmth of targets ('warmth selectors'). They assigned higher dominance to competence selectors than to warmth selectors. But excluded targets did not make this differentiation. Additionally, excluded targets reported higher anger and sadness than included targets, and similar to the findings of Çelik, Lammers, et al. (2013) targets excluded on warmth seemed to report more sadness than anger, although this effect was only marginally significant.

The results of this study confirmed our idea that competence selectors would behave more dominantly during the selection procedure than warmth selectors. Unexpectedly however, only included targets were able to see this. Possibly, our rejection manipulation was too confrontational and 'in-your-face', because the selector made a direct gesture of rejection by handing the cards to the individuals whom they wanted to exclude. The direct and active fashion in which the rejection took place might have caused participants to withdraw and may have discouraged them from social contact to prevent any further pain. Consistent with this reasoning Molden, Lucas, Gardner, Dean, and Knowles (2009) have shown across four studies that active rejection led to a prevention focus, including withdrawal from social contact, thoughts about regretting one's actions, and agitation, while passive rejection (being ignored) led to reengagement in social contact, thoughts about regretting the actions that one should have taken, and dejection. A rejection that is more indirect and passive – because subjectively it is more a failure to be included, than an active personal rejection – could thus enhance eagerness for social contact. Therefore, we designed a second study in which the rejection was the *consequence* of the inclusion of others in the group. This form of exclusion is more indirect and passive than the direct rejection manipulation in Experiment 5, while still resulting in being excluded. We expected that this time excluded participants would be at least as capable as included participants to correctly recognize the non-verbal behavior of the selector. In this study we also included selector coldness in addition to selector dominance as a dependent variable.

Method

Participants and design

In return for course credit, 124 psychology students of Tilburg University (98 women; M_{age}= 20.02 years, SD_{age}= 2.77) participated in 27 groups of four (11 groups) or five (16 groups) participants each. The design of this study was identical to the design of the previous study, with selectors being randomly chosen in each group, and groups being randomly allocated to competence and warmth selection.

Procedure

The procedure of this experiment was identical to the procedure of the previous experiment, with the exception that selectors now engaged in an indirect act of exclusion. They did this by putting the cards on the tables of the targets whom they wanted to include, instead of on the tables of the targets whom they wanted to exclude[4].

Measures

Self- and other ratings prior to the selection. Immediately after the group task, participants answered the same questions about themselves and their group members as in the previous study. Internal consistency was sufficient for all composite items: "I feel part of the group", "I feel accepted by my group members", and "I had an equal share in the group task as the others" (α= .75); "My group members seem to be friendly", "My group members seem to be nice"(r= .97, p< .001); "My group members seem to be intelligent", "My group members seem to be sensible" (r= .78, p< .001).

Dependent variables. After the selection took place, participants filled in the same anger (α= .87) and sadness items (α= .94) as in the previous study, followed by the dominance items (α= .83). Importantly, we now added a measure for perceived coldness as well, using the items "cold", "distant", "closed" and "negative" (α= .89). This new measure followed immediately the dominance measure.

Manipulation checks. After assessing the dependent variables, we probed for conscious awareness of the selection criterion – warmth or competence – this time using a dichotomous measure, instead of an open-ended question. Specifically, we asked targets to guess what they thought the reason behind the selection was. Next, as in the previous study, participants indicated their level of belongingness in the group with the items "I feel part of the group" and "I feel accepted by my

[4]Like in the previous study, in groups in which there were three targets, one individual was included, and two were excluded.

group members" (r= .86, p< .001). We found that in all conditions more than 90% of the targets thought that the reason of the selection was warmth.

Finally, because in this study selectors engaged in a gesture of inclusion (they gave the cards to the targets that they wanted to include, instead of to the targets that they wanted to exclude), we wanted to check whether participants were aware of the indirectness of the rejection. We assessed this by asking participants to what extent they saw the selector as an includer, and to what extent as an excluder. At the end of the study targets were therefore asked to indicate their agreement with the items "The selector had a positive role; he/she choose people" and "The selector had a negative role; he/she rejected people", on 7-point Likert scales ranging from *strongly disagree* (1) to *strongly agree* (7).

Results

Statistical procedures

There were no previously acquainted participants. The total number of targets was 97. The total number of selectors was 27. We checked again for levels of between-group variance for each outcome variable separately using the Mixed procedure in SPSS. These analyses indicated that the ratio of between-group variance to the total variance – the intra-class correlation (ICC) – was negligible for most outcome variables (< .05). However, for the variables "perceived coldness in the selector" and "perceived dominance in the selector", the ICC's were respectively .33 and .22. This means that 33% and 22% of the total variability in the scores on these measures lies between groups. Therefore, for these dependent measures we conducted multi-level analyses using Linear Mixed Modeling in SPSS 17. For all other analyses we conducted standard regression and variance analysis using SPSS 17. We conclude the results section with an overall analyses on the two data sets collapsed with Experiment as a between-subjects factor.

Manipulation checks

Belonging. A 2 × 2 (Selection Criterion[between: competence vs. warmth) × Selection Outcome [between: included vs. excluded]) ANOVA with belongingness scores as the dependent variable revealed only a main effect of Selection Outcome, $F(1, 93)= 17.15$, $p< .001$, $\eta_p^2= .157$. As expected, excluded targets felt less belonging ($M= 4.83$, $SD= 1.32$) than included targets ($M= 5.77$, $SD= 0.85$). We found no main effect of the Selection Criterion, $F(1, 93)= 0.30$, $p= .586$, nor an interaction-effect $F(1, 93)= 0.75$, $p= .389$

Self- and other-perceptions prior to selection. We again checked whether self- and other-perceptions prior to the selection differed between rejected and included individuals. Independent samples t-tests with Selection Outcome as the between-subjects variable and the different measures of self- and other-perceptions prior to selection as the dependent variables revealed no significant differences between rejected and included individuals. See Table 4.3.

Table 4.3: General, self- and other-perceptions prior to the selection (Experiment 6).

	Excluded M (*SD*)	Included M (*SD*)	*t* (95)	*p*
General perceptions of acceptance	5.89 (*1.19*)	5.66 (*1.17*)	-0.96	.341
General perceptions of competition	2.15 (*1.61*)	2.30 (*1.50*)	0.47	.642
General perceptions of equality	5.96 (*0.99*)	5.96 (*0.88*)	0.02	.985
Self-perceptions of warmth	5.71 (*0.97*)	5.75 (*0.89*)	0.19	.848
Self-perceptions of competence	5.21 (*1.09*)	5.40 (*0.97*)	0.87	.388
Other-perceptions of warmth	6.33 (*0.73*)	6.20 (*0.75*)	-0.91	.368
Other-perceptions of competence	5.77 (*0.96*)	5.73 (*0.83*)	-0.23	.821

Perceptions of the selector's role. a 2 × 2 × 2 (Selection Criterion[between: competence vs. warmth] × Selection Outcome[between: included vs. excluded] × Perceived Role[within: includer vs. excluder]) between–within mixed ANOVA revealed a main effect of Selection Criterion, $F(1, 71)= 9.01$, $p= .004$, $\eta_p^2= .113$, and a main effect of Perceived Role, $F(1, 71)= 5.31$, $p= .024$, $\eta_p^2= .070$. It appeared that targets subjected to a competence selection gave higher ratings on both questions ($M= 4.12$, $SD= 1.70$), than targets subjected to a warmth selection ($M= 3.70$, $SD= 1.57$). But as expected, targets indicated that they saw the selector as being more an includer ($M= 4.35$, $SD= 1.56$) than an excluder ($M= 3.56$, $SD= 1.76$)[5]. This suggests that targets correctly perceived that the rejection manipulation was indirect, and that they probably felt *not included*, instead of rejected. The Selection Outcome, $F(1, 71)= 0.13$, $p= .425$, and Selection Criterion × Selection Outcome × Role interaction-effect, $F(1, 71)= 0.06$, $p= .814$, were

[5]Not all targets answered this question, because it was added later to the study. For the selectors this question was present from the beginning. Similar to the findings for the targets, competence selectors gave higher ratings on both questions ($M= 4.86$) than warmth selectors ($M= 3.85$), $F(1, 25)= 8.65$, $p= .007$, $\eta_p^2= .257$. But contrary to the targets' opinions, selectors saw themselves more as excluders ($M= 4.81$) than as includers ($M= 3.93$), $F(1, 25)= 5.59$, $p= .026$, $\eta_p^2= .183$. (Selectors indicated their agreement the items: "I had a positive role; I choose people" and "I had a negative role; I rejected people" on Likert scales ranging from *strongly disagree* (1) to *strongly agree* (7).

both non-significant[6].

Main analyses

Perceptions of selector dominance and coldness. We conducted a 2 × 2 (Selection Criterion[between: competence vs. warmth) × Selection Outcome[between: included vs. excluded]) Linear Mixed analysis; first with dominance scores as the dependent variable, and then with coldness scores as the dependent variable. The analysis with dominance as the dependent variable yielded as expected a significant main effect of Selection Criterion, B= -0.60, SE= 0.28, t= -2.12, p= .044. Inspecting the means revealed that, regardless of the Selection Outcome, all targets assigned higher dominance to competence selectors (M= 3.71, SD= 1.11), than to warmth selectors (M= 3.10, SD= 1.27). The main effect of Selection Outcome (B= -0.09, SE= 0.23, t= -0.37, p= .714), and Selection Criterion × Selection Outcome interaction-effect (B= -0.05, SE= 0.23, t= -0.23, p= .821) were both not significant. See Figure 4.2.

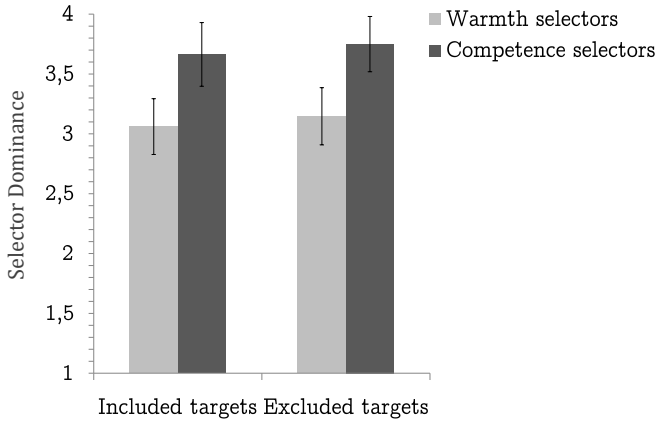

Figure 4.2: Targets' perceptions of dominance in selectors (Experiment 6). Error bars indicate standard error of the mean.

The analysis with coldness as the dependent variable yielded a marginally significant main effect of Selection Criterion, B= 0.57, SE= 0.30, t= 1.93, p= .066. Regardless of the Selection Outcome, all targets assigned higher coldness to

[6]In contrast to the previous study, selectors evaluated included and excluded targets now as equally competent, $F(1, 25)$= 2.11, p= .159, (included: M= 5.30; excluded: M= 5.00), and equally warm (included: M= 5.70; excluded: M= 5.41), $F(1, 25)$= 2.82, p= .106. Also in contrast with the previous study, competence selectors did not feel more certain of their choice (M= 3.41) than warmth selectors (M= 4.15), $F(1, 25)$= 2.04, p= .166. In this study we did not make video recordings of the selectors.

warmth selectors (M= 2.75, SD= 1.06), than to competence selectors (M= 2.18, SD= 1.13). The main effect of Selection Outcome, B= -0.04, SE= 0.20, t= -0.19, p= .853, and the Selection Criterion × Selection Outcome interaction-effect, B= -0.17, SE= 0.20, t= -0.87, p= .385, were not significant. See Figure 4.3.

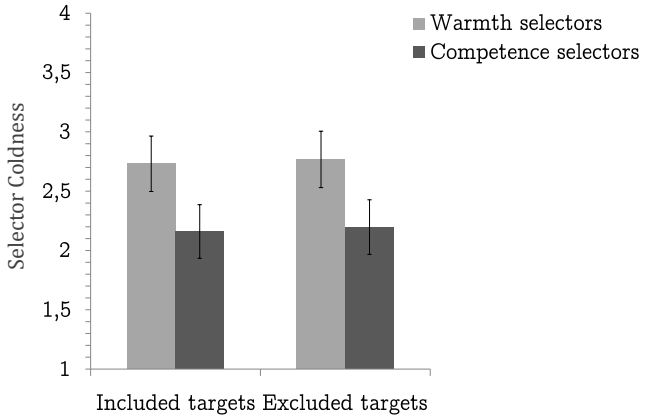

Figure 4.3: Targets' perceptions of coldness in selectors (Experiment 6). Error bars indicate standard error of the mean.

In sum, these results suggest that now excluded targets seemed equally able to differentiate between competence and warmth rejections as included targets[7].

Emotions. A 2 × 2 × 2 (Selection Criterion[between: competence vs. warmth] × Selection Outcome[between: included vs. excluded] × Emotion[within: sadness vs. anger]) between–within mixed ANOVA revealed a main effect of Selection Outcome, $F(1, 92)$= 9.47, p= .003, η_p^2= .093, and a marginally significant main effect of Emotion, $F(1, 92)$= 3.07, p= .083, η_p^2= .032. These effects were qualified by a significant Selection Criterion × Selection Outcome × Emotion interaction, $F(1, 92)$= 5.33, p= .023, η_p^2= .055. We explored the three-way interaction-effect further by conducting simple comparison tests. As expected, these analyses revealed no significant differences between anger and sadness depending on the selection criterion among included targets. But among excluded targets a warmth rejection led to higher levels of sadness (M= 1.83, SD= .97) than anger (M= 1.37, SD= 0.60), $F(1, 92)$= 10.48, p= .002, η_p^2= .102. Also, anger was higher among targets who were excluded on competence (M= 1.83, SD= 1.16), compared to targets who were excluded on warmth (M= 1.37, SD= 0.60), $F(1, 92)$= 2.35, p= .035,

[7]In contrast to the previous study, selectors now thought they came across as more dominant (M= 3.52) than cold (M= 2.46), $F(1, 25)$= 17.97, $p < .001$, η_p^2= .418, irrespective of the instruction that they received. (We measured selectors' self-perceptions of coldness (α= .86) and dominance (α= .88) again with the same items that the targets rated them on.)

η_p^2= .047. But among targets who were excluded on competence anger was not higher than sadness, $F(1, 92)$= 0.04, p= .853, and sadness did not differ between targets excluded on warmth and targets excluded on competence $F(1, 92)$= 0.01, p= .906[8]. See Figure 4.4.

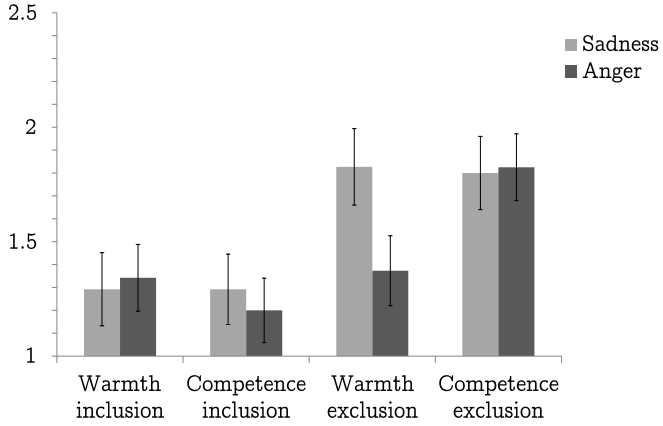

Figure 4.4: Impact of competence and warmth rejection on sadness and anger among included and excluded targets (Experiment 6). Error bars indicate standard error of the mean.

Overall analyses across Experiments 5 & 6

Perceptions of selector dominance. We conducted a 2 × 2 × 2 (Selection Criterion [between: competence vs. warmth] × (Selection Outcome[included vs. rejected] × Study[Experiment 5 vs. Experiment 6]) Linear Mixed analysis with dominance scores as the dependent variable. Similar to the results in Experiment 6, this analysis only yielded a significant main effect of Selection Criterion, B= -0.57, SE= 0.20, t= -2.91, p= .005. The main effect of Selection Outcome (B= -0.23, p= .205), the Selection Criterion × Selection Outcome interaction-effect (B= 0.23, p= .199), and the Selection Criterion × Selection Outcome × Study interaction-effect (B= -0.28, p= .126), were all non-significant. Inspecting the means revealed that, irrespective of Study and Selection Outcome, included and excluded targets from both studies assigned higher dominance to competence selectors (M= 3.57, SD= 1.14), than to warmth selectors (M= 3.00, SE= 0.98).

Emotions. A 2 × 2 × 2 × 2 (Selection Criterion[between: competence vs.

[8]In this study warmth selectors (M= 3.55), compared to competence selectors (M= 2.80), reported the most pronounced emotions, $F(1, 25)$ = 6.86, p= .015, η_p^2= .215, but on average, positive emotions were felt stronger (M= 3.95) than negative emotions (M= 2.40), $F(1, 25)$ = 21.93, p ¡ .001, η_p^2= .467 (α's resp. .86 & .93).

warmth] × (Selection Outcome[between: included vs. excluded] × Emotion[within: sadness vs. anger]) × Study[Experiment 5 vs. Experiment 6]) between–within mixed ANOVA revealed a main effect of Selection Outcome, $F(1, 167)= 39.52$, $p<.\ 001$, $\eta_p^2= .192$, and Study, $F(1, 167)= 6.07$, $p= .015$, $\eta_p^2= .035$[9]. Excluded targets felt both emotions stronger than included targets. And Experiment 5 elicited a higher intensity in emotions than Experiment 6.

Above effects were also qualified by a significant Selection outcome × Study interaction-effect, $F(1, 167)= 5.24$, $p= .023$, $\eta_p^2= .031$, and a significant Selection Criterion × Selection Outcome × Emotion interaction-effect, $F(1, 167)= 5.61$, $p= .019$, $\eta_p^2= .033$. The Selection Criterion × Selection Outcome × Study × Emotion interaction-effect was not significant, $F(1, 167)= 0.162$, $p= .688$. Exploring the two-way interaction revealed that especially among excluded targets, the selection in Experiment 5 led to stronger anger and sadness ($M= 2.21$, $SD= 1.09$), than the selection in Experiment 6 ($M= 1.71$, $SD= 0.98$), $F(1, 167)= 10.54$, $p= .001$, $\eta_p^2= .060$. Among included targets the selection in Experiment 5 did not lead to stronger anger and sadness ($M= 1.30$, $SD= 0.49$) compared to the selection in Experiment 6 ($M= 1.28$, $SD= 0.45$), $F(1, 167)= 0.02$, $p= .897$. Thus the direct rejection in Experiment 5 was apparently experienced as more negative than the indirect rejection in Experiment 6.

Exploring the three-way interaction-effect revealed no significant differences between anger and sadness among included targets. But among excluded targets a warmth rejection led to higher levels of sadness ($M= 2.08$, $SD= 1.10$) than anger ($M= 1.68$, $SD= 0.95$), $F(1, 167)= 11.79$, $p< .001$, $\eta_p^2= .066$. Among targets who were excluded on competence anger was not significantly higher than sadness, $F(1, 167)= 1.15$, $p= .286$. But anger was higher among targets who were excluded on competence ($M= 2.03$, $SD= 1.07$), compared to targets who were excluded on warmth ($M= 1.68$, $SD= 0.95$), $F(1, 167)= 4.81$, $p= .030$, $\eta_p^2= .028$. Finally, sadness was not significantly higher among targets excluded on warmth, compared to targets excluded on competence $F(1, 167)= 0.75$, $p= .388$. See Figure 4.5.

In sum, the overall analysis suggests that competence selectors behaved more dominantly than warmth selectors, and both included and excluded targets were able to see this. We found however no indications that excluded targets were more sensitive than included targets in distinguishing between competence and warmth selectors, due to the indirectness of the rejection manipulation in Experiment 6. The directness of the rejection also did not seem to impact the pattern of emotional

[9]There was also a marginally significant main effect of emotion $F(1, 167)= 3.04$, $p= .083$, $\eta_p^2= .018$, suggesting that overall sadness was felt stronger than anger. The main effect of Selection Criterion was non-significant, $F(1, 166)= 0.17$, $p= .684$.

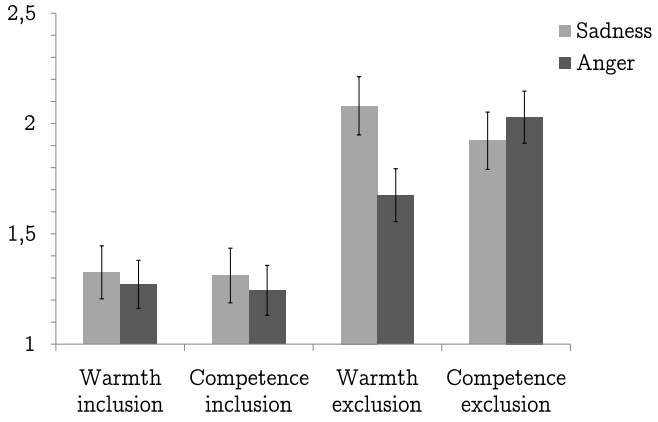

Figure 4.5: Impact of competence and warmth rejections on sadness and anger across Experiments 5 & 6. Error bars indicate standard error of the mean.

reactions to the rejection; across both studies a warmth rejection led to higher levels of sadness than anger, and anger was higher in response to a competence rejection, compared to a warmth rejection. The directness of the rejection only impacted the intensity of emotions, with intenser emotions among participants who were excluded in a direct fashion (this was not the case among included participants). Thus, although the directness of the exclusion seemed to moderate the intensity of emotions in response to exclusion, it did not moderate excluded targets ability to distinguish between competence and warmth selectors, and it also did not moderate how the reason of the rejection (warmth or competence) affected anger and sadness separately.

General discussion

The aim of this chapter was to investigate how warmth and competence appraisals that precede a rejection are communicated non-verbally to targets of a selection, and whether rejected targets would be more sensitive to recognize the non-verbal of the person who engages in the selection than non-rejected included targets.

We conducted two experiments in which some participants were included and others were excluded in a face-to-face group selection. The selector was always one of the group members, who was randomly allocated this role. In both experiments selectors were either instructed (out of targets' earshot) to base their choice on their evaluations of the targets' competence, or on their evaluations of the targets' warmth.

We hypothesized that selectors who were instructed to make their choice based on their subjective evaluation of the targets' competence ('competence selectors') would behave more dominantly, compared to selectors who were instructed to make their choice based on their subjective evaluation of the targets' warmth ('warmth selectors'). Conversely, we expected that warmth selectors would behave colder than competence selectors. Furthermore, we hypothesized that both included and excluded targets would be able to see this difference between competence and warmth selectors, with more exaggerated perceptions among excluded targets due to their heightened sensitivity to non-verbal and social cues in general. Finally, based on previous findings by Çelik, Lammers, et al. (2013) we also expected that among targets excluded because of their (perceived lack of) competence, feelings of anger would be more pronounced compared to feelings of sadness. Conversely, among targets excluded because of their (perceived lack of) warmth, we expected that feelings of sadness would be more pronounced, compared to feelings of anger. We did not expect these patterns for included individuals.

In Experiment 5 the observations of included targets indicated that competence selectors indeed behaved more dominantly than warmth selectors. But contrary to our expectations, excluded targets did not demonstrate a magnified perception of dominance; they did not make a differentiation between competence and warmth selectors at all. Also regarding excluded targets' emotional reactions to the selection, we did not find support for our hypotheses – except for a weak relationship between a warmth rejection and higher sadness compared to anger. We found however no evidence for the other expected effects. We speculated that one explanation for these findings could have been been the direct and active fashion in which the rejection took place in this study – selectors directly indicated whom they wanted to exclude, and the inclusion of the other targets followed from this as a consequence – which could have caused excluded targets to withdraw from social contact. Therefore, we designed a second study, Experiment 6, in which we altered the rejection manipulation such that selectors now rejected targets indirectly and in a more passive fashion – selectors *only* indicated whom they wanted to include, thus exclusion was now the indirect consequence of others being included. We anticipated that this type of rejection would be experienced more as a failure to obtain inclusion, than as an overt act of rejection. Consequently we reasoned that this type of rejection should mitigate social withdrawal, and perhaps even heighten social engagement (see also: Molden et al., 2009). Partially consistent with this reasoning, the results now indicated that both included and excluded targets observed that competence selectors behaved more dominantly than warmth selectors, and that warmth selectors behaved colder than compe-

tence selectors. But contrary to our expectations, excluded targets (compared to included targets) did not have exaggerated perceptions of the selectors' dominance and coldness. Finally, regarding excluded targets' emotional reactions to the selection, results were now more consistent with our expectations as well; targets excluded on warmth reported more sadness than anger, and targets excluded on competence reported more anger, than targets excluded on warmth. As expected, among included participants these effects were absent.

The overall analysis on the two datasets combined yielded the same results as Experiment 6 regarding targets' observations of the selectors' behavior, and their emotions in response to the selection. Additionally, this analysis showed that the direct rejection in Experiment 5 caused a higher intensity in feelings of anger and sadness among excluded targets, than the indirect rejection in Experiment 6. But the directness of the rejection did not seem to impact targets' observations of the selectors' behavior, nor the direction of their emotional responses to the rejection.

Note, that targets of the selection did not explicitly know on what grounds the selection took place. They also did not know that their competence and warmth were part of the selection at all; they had no explicit information what so ever. Still they were able to correctly recognize dominance and coldness in the selectors. This suggests that people are highly attuned to signs of competence and warmth evaluations. But interestingly, included targets were as sensitive to the selectors' behavior as excluded targets (in Experiment 6, and also according to the overall analysis), while we had initially expected that the experience of a rejection would function as a magnifier on excluded targets' perception of the selectors' behavior; we had implicitly assumed that the included targets are in essence 'bystanders', observing a rejection taking place. Seeing our results, we are now inclined to conclude that it is perhaps more about being the target of a selection (vs. not being the target of a selection), rather about being excluded (or included), which determines an individual's sensitivity for the selector's behavior. In a face-to-face live selection all targets (at least from their own subjective experience) face an equal threat of possible exclusion. This might have rendered everybody equally sensitive for the non-verbal behavior of the selector, from the moment that the selection was announced until it actually took place.

Nevertheless, among excluded targets their emotional responses suggest that they did respond to the reason of the rejection. Moreover, because their emotional reactions can not be the result of explicit inference or appraisals regarding the reason of the rejection, anger and sadness seem to be the direct – i.e. cognitively unmitigated – result of the selectors' behavior. This further bolsters credibility of our idea that sad and angry responses to respectively warmth and competence

rejections are indeed functional and help us to navigate the social world. Sadness evokes sympathy and is ultimately more functional in restoring likeability and warmth than anger, while anger evokes fear and is ultimately more functional in restoring respect and status (Keltner & Haidt, 1999; Keltner & Gross, 1999; Shaver et al., 2001; Tiedens, 2001).

Strengths and Limitations

With our paradigm we managed to simulate a real life experience of a selection procedure, both from the perspective of the targets of the selection, as from the perspective of the person who does the selection. Our paradigm is one of the first to investigate the impact of ostracism in a group setting (but see also, Poulsen & Kashy, 2012; Sommer, Williams, Ciarocco, & Baumeister, 2001; Williams et al., 1998; Zadro et al., 2005). Moreover, it extends previous paradigms because we not only assess intrapersonal, but also interpersonal processes between the selectors and targets of the selection. Our results show that even in minimal group interactions, and in the absense of verbal communication, appraisals of warmth and competence are swiftly communicated and picked up.

Note, that based on the results of the overall analysis that we did across both experiments, we concluded that the directness of the rejection did not moderate the impact of the rejection on targets' ability to recognize the selectors' non-verbal behavior, and on the direction of their emotional responses. However, we realize that our sample size may have been too small to render enough statistical power to result in a significant 4-way interaction-effect. Therefore, we think it is in place to elaborate more on the differences between the findings of both studies, especially the findings concerning the excluded targets' observations of the selectors' behavior. It may be that excluded targets in Experiment 5 were indeed unable to recognize the behavior of the selector because they withdrew from social contact due to the overly direct way they were rejected. But an alternative explanation is that those who were rejected systematically differed from those who were included, seeing that being included or excluded was not the result of random assignment, but the choice of the selector. It is possible that rejected individuals were truely less competent and had less (dispositional) capacity to understand non-verbal behavior than included participants, and that selectors made their choice based on the (conscious or unconscious) detection of this difference. Yet from the selectors own reports their choice to exclude some participants and not others was not the result a conscious weighing of their opinions about the targets. Recall that in Experiment 5 selectors evaluated included targets as both warmer and more

competent than excluded targets, and in Experiment 6 they did not have differing opinions about excluded and included targets at all. Therefore, we believe that it is more likely that selectors formed an implicit and fully subjective opinion (i.e. not based in reality) about the targets competence and warmth, experienced as a 'wild guess', that expressed itself non-verbally, but did not cristallize in clear verballizable opinions about the targets. Another possibility is that selectors had no opinion about the targets what so ever, and that simply following the task at hand was enough to activate the behavioral pose. Imagine for example a school teacher who has to expel one of his pupils for bullying another kid. The teacher might not necessarily dislike the bully, yet his non-verbal behavior might still (consciously or unconsciously) express coldness to convey his message more effectively. In other words, the very instruction to select on competence or warmth might have caused selectors to adopt a slighty more dominant or cold body posture. In any case, also considering the fact that participants were drawn from a homogeneous sample of first year psychology students and the measurements on self- and other perceptions prior to the selection not indicating large systematic differences between included and rejected participants, we deem it highly unlikely that excluded targets differed in any systematic way from included targets. Moreover, even if there were any differences between individuals, the group task was likely to be too short for selectors to be able to detect any real differences between individuals. Nevertheless, we acknowledge that we could have avoided this potential confound by assigning participants randomly to inclusion and exclusion conditions, but we decided to sacrifice part of our experimental control to allow the non-verbal behavior of the selectors to emerge naturally, i.e. as a consequence of their own choices.

Finally, one may also question whether selectors truly behaved according to the targets' observations, because ratings of our objective observers did not corraborate the observations of the targets (see Experiment 5). One may speculate that participants had already formed a quick first impression about each other's warmth and competence during the group task (and collectively agreed on this first impression), and that they imposed/projected dominance and coldness to the selectors behavior. Note that this explanation only holds under the assumption that targets were indeed selected based on their (perceived) competence and warmth, and that selectors *did* made their choice according to the instructions that they received. Thus, this alternative explanation implies that implicitly targets associated a lack of warmth with a coldness response, and a lack of competence with a dominance response. Under this reasoning, we argue that it is more likely that selectors indeed showed dominance and coldness, than that this was just in the eye of the targets. On a more general note, perceptions of non-verbal expressions of interper-

sonal appraisals may be highly dependent on the course of a specific interaction between individuals. In other words, targets may have assessed the selectors' dominance and coldness relative to their own dominance and coldness, and perhaps even relative to the selectors own behavior prior to the selection. As such, obtaining a truely objective measure of the selectors' behavior could have only been approximated by observing the complete group interaction, and each individuals' (including the targets') dominance and coldness relative to one another.

Taken together, our results suggest that selectors were affected by the selection instructions in a way that was consistent with our expectations. Whether their dominance and coldness were the concequence of their (explicit or implicit) opinions about the targets, or the direct cause of the instruction (unmediated by any personal opinions about the targets), remains in the middle. But what is clear is that competence rejections are conducted in a more dominant manner than warmth rejections, and warmth rejections are conducted in a colder manner than competence rejections. Moreover, excluded targets are not only able to see these differences in behavioral pose, they also respond with adaptive emotions to the reason of the rejection (at least when the rejection takes place in an indirect way).

Relationship to literature and future directions

The present findings add to studies in the literature showing the effect of rejection on social sensitivity and basic early-stage perceptual processing of others behaviors (Bernstein et al., 2008; Wilkowski et al., 2009; DeWall et al., 2009; Pickett et al., 2004; Gardner et al., 2005, 2000; Hess & Pickett, 2010; Lakin et al., 2008). These studies show that rejected individuals engage in more social mimicry, have increased attention to others' eye gaze, smiles, vocal tone, facial emotion and expressions, and social information in general. Interestingly, in our studies included individuals seemed to display the same level of sensitivity as excluded individuals. Possibly, being the target of a selection enhances the sensitivity to social information, regardless of the outcome of the selection. Future studies using a similar paradigm could include non-target observers (who are physically present during the selection, yet not a target of the selection), to investigate this possibility.

Notwithstanding, if we were to disregard the results of the overall analysis, the results of Experiment 5 suggest that a selection situation does not enhance sensitivity to social information under all circumstances. Possibly an active and personal rejection might hamper sensitivy to social information because it causes the individual to disengage from their rejecter. Prior research found that being actively rejected, compared to being ignored and passively excluded, results in dif-

ferent motivational states (Molden et al., 2009). While an active rejection seemes to stimulate a prevention focus, ignoring (presumably because it is experienced as a failure to obtain acceptance) seems to stimulate a promotion focus (see Higgins, 1997). Because in a prevention mode people are in a more vigilant state, an active rejection might primarily direct attention to cues of social threat, or even cause a complete withdrawal from social contact all together. A promotion focus on the other hand is associated with an enhanced eagerness, and might primarily direct attention to cues of social acceptance, resulting in increased social engagement in response to being ignored. Importantly, future research might look into how these responses might differ depending on the identity of the social interaction partner. After a direct rejection, the individual might refrain from social contact with his rejecter (as seemed to be the case in Experiment 5), but might not refrain from social contact with unknown outsiders, even if it is in a more vigilant and cautious manner. Our studies were initially not designed to study the impact of direct vs. indirect rejections on social sensitivity. But future research could employ a paradigm that is better tailored at investigating this (i.e. a paradigm in which inclusion and exclusion are randomized and do not occur in a group setting, and in which the social cues to be rated are standardized), and could distinguish between different interaction partners as well (DeWall et al., 2009).

The current studies are relevant to the emotion literature as well, as they suggest that adaptive emotional responses can arise in isolation from cognitive appraisals. In neither of the studies in this chapter, targets explicitly seemed to know on what grounds – competence or warmth – the selection took place. Yet their emotional responses were adaptive. This finding is interesting for the current discussion about whether appraisals are necessary for the emergence of emotions or not (Siemer, Mauss, & Gross, 2007; Zajonc, 1997; Lazarus, 1997, 1991). Related to this, the finding that individuals were able to correctly read the selectors non-verbal behavior, raises the question how emotions and the perception of non-verbal behavior may be intertwined. Future research might investigate whether the emergence of emotions shape our inferences about others' behaviour, and/or the other way around. Post hoc analyses testing both options, yielded no evidence for a relation between participants' observations of the selectors' behavior and their emotional responses to the rejection. Related to this, it would be interesting to see if, and how this form of implicit understanding leads to subsequent intra- and interindividual behavior that impacts an individual's inclusionary status.

Finally, our findings might be of interest to non-verbal communication researchers as well because the paradigm we used is very similar to the often used zero-acquaintance paradigm in that field. But whereas in the zero-acquaintance

paradigm participants rate stable personality variables (Albright, Kenny, & Malloy, 1988; Kenny, Horner, Kashy, & Chu, 1992; Passini & Norman, 1966; Paunonen, 1989), in our paradigm, the ratings concerned fleeting displays of dominance and coldness as a function of an experimental manipulation. The results of our studies suggest that even under these circumstances fleeting behavioral poses are in essence observable. It is interesting to see that, in a minimal group setting with interactions of less than 1.5 minutes, individuals were able to pick up on how the selector was feeling. These findings thus extend earlier findings in the field showing that people are able to make fairly accurate judgments of others personality based on very short and minimal interactions (Albright et al., 1988; Ambady, Bernieri, & Richeson, 2000; Ambady & Gray, 2002; Ambady & Rosenthal, 1992, 1993; Ambady & Weisbuch, 2010; Kenny et al., 1992; Passini & Norman, 1966; Paunonen, 1989) because they show that even momentary differences in behavioral posture caused by a specific situation are easily picked up.

Conclusions

Undoubtedly many of us have had the occasional silent wish to be able read the mind of others. The studies in this chapter show that, when we take into account the distinction between competence and warmth, humans appear to be very sensitive to understanding how they are being evaluated in crucial circumstances like selection situations, even when they are not explicitly told so.

Chapter 5

Anti-social personality disorder and reactions to social rejection

The studies this far in this thesis have all been conducted among a student population. The last empirical chapter investigates reactions to social rejection among an extreme group of individuals: violent offenders diagnosed with anti-social personality disorder (ASPD). The characteristics of this disorder suggest that these individuals might be especially controlling in their need to be respected as a competent individual. I investigated the role of exerting social control in their reaction to being rejected, and compared this to individuals from a normal population without a known history of violence, or diagnosis of ASPD. Participants played an altered version of the Cyberball game in which they could control the actions of the other players or not. The results showed that having control (compared to having no control) prior to rejection mitigated the impact of rejection among violent offenders diagnosed with ASPD, but not among individuals from a normal population. This suggests that control needs are crucial in the typology of ASPD, to such an extent that they may hinder adaptive responding to social rejection.

This chapter is adapted from:

Çelik, P., Van Beest, I., Lammers, J., & Bekker, M. H. J.(2013). Implicit threat vigilance among violent offenders diagnosed with antisocial personality disorder: The impact of ostracism and control threat. *International Journal of Developmental Science,* 7(1), 47-55.

Introduction

One of the most typical characteristics of individuals with an antisocial personality disorder (ASPD) is their violent and aggressive behavior in social relationships. Importantly, their behavior is not only destructive for the individuals around them, but also for themselves. These individuals alienate themselves from friends, family members and society in general, and often find themselves rejected for their disruptive behavior. Many end up in penitentiaries, which can be considered the ultimate form of social rejection.

In the current chapter we aim to show that male violent offenders diagnosed with ASPD are acutely responsive to short experiences of interpersonal control in a game of Cyberball (Williams & Jarvis, 2006), more so than individuals from a normal population without a known history of violence, or diagnosis of ASPD. More specifically, we hypothesize that for violent offenders with ASPD possessing control is so important, that a short experience of interpersonal control will be enough to break down their normal response to ostracism. For normal individuals we expect that the same control experience will have less impact on their response to ostracism.

The need for control and ostracism

The need for control is theorized to be one of the basic needs that is thwarted by ostracism (Williams, 2007a, 2007b). As such, one would expect that satisfying this need should offer relief from the immediate negative consequences of ostracism. Paradoxically, this seems not to be the case, at least not for individuals from a normal population; in a study conducted by Warburton et al. (2006), giving normal individuals (students) control after a rejection experience, did not seem to mitigate the immediate social pain caused by social rejection. Only the more delayed response of aggression was mitigated by the control manipulation.

Many other studies show similar unmitigated stress responses towards social rejection among normal individuals. For example, the ostracizer can be a member of a despised out group like the Ku Klux Klan, a stranger, or even a computer – in all of these situations ostracism is always equally threatening (Gonsalkorale & Williams, 2007; Williams et al., 2000; Zadro et al., 2004). Even when the ostracizer had no choice in doing so (Zadro et al., 2004), or when being ostracized pays off financially (Lelieveld et al., 2013; Van Beest & Williams, 2006), or when ostracism is shared, being rejected and ostracized hurts (Van Beest et al., 2012). Finally, also when participants themselves are responsible for their own exclusion, ostracism still hurts (De Waal-Andrews & Van Beest, 2012). These findings underscore

how important belonging is for human beings; rejection leads to immediate and unmitigated social pain, which is not easily soothed by potentially mitigating factors, not even by control.

Most reported studies on ostracism have been conducted among the typical student samples (with the exception of: Abrams, Weick, Thomas, Colbe, & Franklin, 2011; Masten et al., 2009; Moor et al., 2012; Sebastian, Viding, Williams, & Blakemore, 2010; Wölfer & Scheithauer, 2013). Whether individuals with ASPD will show the same unmitigated response towards ostracism the way normal individuals do is therefore unknown. There is evidence that individuals from a normal population who score higher on traits related to ASPD – psychopathy, machiavellianism, and narcissism – are not less affected by ostracism (Williams, 2007a). On the other hand, there is also evidence that normal individuals with traits related to Schizotypical personality disorder seem relatively less affected by ostracism. This effect is largely due to deceitfulness, a trait that is also related to ASPD (Wirth, Lynam, & Williams, 2010).

These observations raise the question whether individuals with ASPD would behave differently to ostracism than normal individuals. One reason why this may be the case is that ostracism undermines a personal sense of control over one's social relations, while this sense of control has a central role in ASPD.

The need for control and antisocial personality disorder

Individuals with ASPD show many problems associated with social malfunctioning: repeated acts of aggression, selfishness, deficient moral reasoning, and a general under-socialization with a failure in maintaining meaningful relationships with others (Hare, 2011). We propose that one way to conceptualize this disorder is in terms of interpersonal circumplex models (Leary, 1957). The vertical axe reflects hierarchical relations involving rank and status whereas the horizontal axe reflects communal relations involving love and affiliation (Kiesler, 1983; Wiggins, 1979; Wiggins & Broughton, 1985). These axes since then have been variously labeled as power vs. love, agency vs. communion or dominance vs. affiliation. Despite the different labels, research suggests a substantial overlap between these conceptual opposites (Abele & Wojciszke, 2007). The dominant labeling in contemporary research is competence vs. warmth (Cuddy et al., 2008; Fiske et al., 2007; Wojciszke, 2005; Wojciszke et al., 1998). Possibly, individuals with ASPD have a lower than normal need for affiliation, or warmth in their relationships (Bekker, Bachrach, & Croon, 2007), while having a higher than normal need for power, respect and competence. For example, aggression has been related to control needs (Depret

& Fiske, 1993; Frieze & Boneva, 2001; Mueller, 1983). More specifically, some acts of aggression may be used as a means to restore a sense of interpersonal control or power (Baumeister, Smart, & Boden, 1996; Williams & Warburton, 2003). Furthermore, dysfunctional thought patterns about wanting to control one's environment and specifically other people have been found to predict antisocial and criminal behavior (Mandracchia, Morgan, Garos, & Garland, 2007). For example, low perceived control has been found to be related to more violent abuse in relationships (Prince & Arias, 1994). Possibly, in social relationships individuals with ASPD often revert to control, claiming respect and acceptance, which sometimes escalates in more rejection and in turn elicits aggression and even more attempts at controlling the other person(s) in the relationship.

Under-socialization has also been related to an external locus of control (Rain, Roger, & Venables, 1982). Locus of control refers to an individual's basic belief system about the determinants of outcomes in his or her life (Rotter, 1975). Individuals with an external locus of control believe that the outcomes of their behavior are determined by luck or fate, by powerful others, or that their life outcomes are simply unpredictable. These individuals often have the feeling that 'things just happen' to them. In contrast, individuals with an internal locus of control believe that the outcomes of their behavior are contingent on their own behavior or personal characteristics. From a developmental perspective, locus of control results from the process of learning associations between one's own behaviour, and reinforcements of that behavior over time. Individuals who are exposed to a chronic inconsistency in parental discipline and reward at a young age are more likely to develop an external locus of control (Carton & Nowicki, 1994; Epstein & Komorita, 1971; Krampen, 1989; Levenson, 1973).

In sum, we propose that individuals with ASPD overly rely on control for their sense of belongingness and at the same time experience a chronic feeling of control deprivation in social situations. This means that any threat to their sense of control due to rejection should be experienced as a disproportionately hard blow. However, this also means that a temporary gain in control should result in an equally strong positive experience as well. To explain this reasoning, consider the following analogy. An individual who is hungry and has not eaten for days would be extremely grateful for every bit of food he could obtain and would also react strongly if food would be taken away. We reason that violent offenders with ASPD are hungry for control. They therefore react strongly to both obtaining and losing control. It is exactly this that we aim to demonstrate with our studies; if it is true that criminal offenders with ASPD are hungry for control, compared to normal individuals, they should be relatively less affected by ostracism once they feel they

are in control.

Experiment 7

We tested a group of male violent offenders who are clinically diagnosed with ASPD, and a control group consisting of males from the normal population without a known history of violence, or diagnosis of ASPD. The control group was sampled from the non-scientific staff of Tilburg University. This group was comparable to our patient population regarding age and education level. At the time of the experiment all participants diagnosed with ASPD were placed under an entrustment order in the Netherlands (*Terbeschikkingstelling* or TBS). Under Dutch law, the entrustment order holds that offenders undergo involuntary treatment at a forensic psychiatric hospital for a fixed period of time, with the option for prolongation if there is still considerable risk for recidivism.

In order to induce control and ostracism we used the Cyberball paradigm (Williams & Jarvis, 2006). Our dependent variable was implicit threat vigilance, measured with a dot probe task (Mogg, Bradley, & Williams, 1995). Prior research typically uses self-reported explicit need threats to measure immediate responses to ostracism. We used an implicit measure of threat vigilance because we wanted to tap into a more immediate and cognitively unmitigated response to rejection. With this measure we aimed to uncover basic cognitive processing following ostracism and directly measure threat vigilance. These basic processes are ultimately thought to shape higher order responses that may follow the ostracism experience (DeWall et al., 2009). Our choice for this measure is also in line with the reasoning that cues of rejection should automatically activate a defensive response system that heightens vigilance for subsequent cues of rejection (Downey, Mougios, Ayduk, London, & Shoda, 2004; Williams, 2001, 2007a, 2007b). Rejected individuals often want to avoid potentially hurtful social situations (MacDonald & Leary, 2005), including getting too close or trustfull to others.

In sum, we expected that among male violent offenders with ASPD short experience of control in the game would mitigate threat vigilance in response to ostracism. For normal individuals we expected that the same control experience would mitigate threat vigilance to a lesser extent.

Method

Participants and design

Participants were 33 male criminal offenders diagnosed with ASPD (M_{age}= 40.33, SD_{age}= 10.22) recruited at the Van Mesdag Clinic in Groningen and 35 male Tilburg University service staff members (M_{age}= 42.77, SD_{age}= 12.01)[1]. All participants signed a consent form and received a monetary compensation for participating in the study[2].

Procedure

The two samples were tested at different locations and in different periods in time. Therefore, we analyzed our patient and control population separately. Importantly, the experimental procedure was identical for both groups of participants – each participant sat in a private room and received oral instructions regarding the Cyberball game. They were told that they would play a ball tossing game on the computer, followed by another computer task that would measure their ability to respond qiuckly to several pictures. After Cyberball the computer program automatically switched to the dot probe task that we used to measure implicit threat vigilance. The specific instructions regarding this task were provided by the computer program.

Cyberball. Cyberball is a computerized online ball tossing game (Williams & Jarvis, 2006). In our version of the game participants played with three other computer generated players. Participants knew they were playing against the computer (See for a similar procedure: Zadro et al., 2004). Each computer generated player had its own unique picture of a male face. Participants could pass the ball to another player by pressing certain keys. All participants played two rounds of Cyberball, of each 5 minutes. In the first round, depending on experimental condition, participants either played a low control game, or a high control game. In the low control game participants were instructed that they could only pass the ball after they received it from one of the other players. In the high control game participants were instructed that they could also determine for the other players to whom they should pass the ball, including to themselves. Thus, they could determine the entire course of the game themselves. Then, in the second round all

[1] University service staff members were restaurant and general maintance personel, mailmen, and library and ICT workers. Although many of these participants' education level matched the ASPD population, due to the library and ICT workers, on average the education level of the normal population was somewhat higher.

[2] Before we approached the individuals with ASPD, we consulted two other researchers at the clinic to ascertain that our experiment would cause no harm. In case of non-intended psychological or emotional harm, individuals had the possibility to consult a counselor who was informed about the content of the study.

participants played a low control game. After 1 minute into the second round, all participants experienced the same exclusion in which the other players completely stopped passing the ball to the participant for 4 minutes.

Relative Game inclusion. Due to the specific set up of our study – in the high control game participants could determine themselves how many times they received the ball, and both games were set to run a specific amount of time, instead of a specific number of ball tosses – we obtained between subject variations in how many ball tosses participants received (or claimed) during the first round of the game (in which the control manipulation took place), as well as in the second round of the game. We used this variation as a continuous independent variable and operationalized it as level of game inclusion; the more balls were obtained by the participant relative to the total amount of ball tosses in both rounds of the game, the higher the game inclusion for that participant. We used game inclusion as a continuous independent variable in our analyses. In this way we could analyze the impact of game inclusion on threat vigilance and also whether control moderated this effect.

Attention to threat. Directly after Cyberball, participants completed the dot-probe task that we used as an implicit measure of threat vigilance. The dot-probe task is a computerized reaction time task that measures attention to specific target stimuli. The task requires participants to respond to a dot probe, a small black dot (3 mm's in diameter), that is initially hidden from view behind one of two target stimuli.

The target stimuli consisted of pictures of 20 different males. Each picture had a version showing a neutral expression and a version showing an angry expression. These were novel faces – not those used in the Cyberball part of the experiment. At the start of each trial a small fixation cross appeared for a random duration between 1000 and 1500 ms and was followed by a blank screen for 200 ms. This was followed by the presentation of a picture pair, for the duration of 500 ms, just above and below this fixation point. Each picture pair consisted either of angry/neutral expression pictures (32 threatening trials), or neutral/neutral expression pictures (32 control trials). After the pictures disappeared, immediately a small black dot was revealed at the previous location of one of the pictures. In half of the threatening trials the dot appeared at the same location as the angry face (congruent trials), whereas in the other half of the threatening trials the dot appeared at the location of the neutral face (non-congruent trials). In the control trials the dot appeared randomly behind one of the two neutral faces. The trials were presented in a randomized order.

Participants were instructed to ignore the pictures, and to keep their attention

focused on the fixation cross. They were instructed that their job was to indicate the location of the dot as quickly and as accurately as possible by pressing "Q" for top and the "P" for bottom. When participants pressed the wrong key, the word "Fout!" (False!) flashed shortly on their screen before the fixation cross reappeared. Then, after pressing one of the two keys the dot disappeared, the fixation cross reappeared, and a new trial started.

Following Koster, Crombez, Verschuere, and De Houwer (2004) we compared reaction times (RT's) on congruent trials (the dot appearing at the same location as the angry face) with RT's on the control trials. Vigilance for threat should lead to faster responses on congruent threatening trials compared to control trials. This would indicate that attention is faster drawn to the threatening faces than to neutral faces. After completing the dotprobe task participants were debriefed and dismissed[3].

Results

Preliminary analyses

Relative game inclusion. Among the participants with ASPD the total number of ball tosses in the two rounds of Cyberball ranged between 56 and 202 (M= 114.70, SD= 23.88). Our control manipulation did not affect the total number of ball tosses, $t(31)$= .43, p= .667, nor the relative number of balls participants themselves received $t(31)$= -.36, p= .721. Among normal participants the total number of ball tosses ranged between 81 and 148 (M= 115.56, SD= 18.73). Again, our control manipulation did not affect the total number of ball tosses, $t(32)$= 1.34, p= .188, nor the relative number of balls participants received $t(32)$= 1.65, p= .108. See Table 6.1.

These findings show that in the low and high control games participants had a similar inclusionary status in the game. That is, independent of whether participants had control over their inclusion or exclusion, they had the ball equally often in their possession. This was the case for both the ASPD and normal populations.

Dot probe task. Trials in which the dot was falsely located were discarded (5.5% for the participants with ASPD, and 1.8% for the individuals without ASPD). Reaction times (RT's) faster than 300 ms and slower than 3000 ms were eliminated (3.7% for the participants with ASPD and 0.7% for the participants without

[3]After completing the dot probe task, we also assessed threats to fundamental needs (Van Beest & Williams, 2006), among the participants without ASPD: threat to belongingness (α= .46), self-esteem (α= .45), meaningful existence (α= .59) and control, (α= .20). We found no effects of game inclusion or the control manipulation on these measures and will not mention them further in our results section. After the dotprobe task we administered a measure of interpersonal closeness and status perception as part of a different study.

Table 6.1: Total number of ball tosses, and mean percentage of balls received by participants, in the low and high control game conditions (in both rounds of Cyberball) (Experiment 7).

	ASPD participants		Normal participants	
	Low control	High control	Low control	High control
Mean number of ball tosses (*SD*)	112.82 (*29.27*)	116.47 (*18.17*)	111.29 (*17.79*)	119.82 (*19.19*)
Mean % of balls received (*SD*)	16% (*1.78*)	16% (*3.28*)	15% (*1.63*)	16% (*2.65*)

ASPD) (Ratcliff, 1993)[4]. Following Koster et al. (2004) we defined threat vigilance as faster response latencies on congruent trials (where the dot appeared behind the angry face) compared to control trials (which contain two neutral faces). To this end we computed threat vigilance scores by subtracting average RT's on the control trials from average RT's on the congruent trials[5]. A Shapiro-Wilk's test of normality (Shapiro & Wilk, 1965) revealed non-normal distributions of threat vigilance scores in both our ASPD as well as normal population ($p < .001$). Because our data was not normally distributed, we subjected the raw data to a log transformation to conform to the normality assumptions of statistical analyses.

Main analyses

To test our main predictions, we ran separate regression analyses for participants with ASPD and participants without ASPD. In both regression analyses we entered Game type (high control game= 0.5; low control game= -0.5), Relative game inclusion (continuous predictor), and their interaction with Game type as predictors. The dependent variable was the log transformed threat vigilance scores. For ease of interpretation of the interaction effects, and to reduce multicollinearity, we standardized the Relative game inclusion scores before computing the interaction terms with Game type (Cohen & Cohen, 1983). For subsequent simple slope

[4] We consider RT's faster than 300 ms and slower than 3000 ms to be response times generated by processes other than the one that we are interested in. Sometimes participants do not remove their finger from the key in between two trials, resulting in extremely fast RT's. Or they are temporarily distracted from the task, resulting in extremely slow RT's. In literature different cut-off point are chosen, ranging between 200 and 2000 ms (see for example Koster et al., 2004). We choose a higher upper-limit of 3000 ms because our patient population was on average slower than our normal population, probably due to less experience with computers. Many of them indicated to never have used a computer.

[5] Another possibility is that RT's on the incongruent threatening trials (the dot appearing at the location of the neutral face) are slower than RT's on the neutral trials. This would indicate a difficulty in disengaging from threat considering the time needed to shift attention from the threatening to the neutral location. We only found results on the vigilance measure.

analyses we created new variables for Relative game inclusion at one 1 standard deviation above, and at 1 standard deviation below their respective means.

ASPD population. The regression analyses for the ASPD patient population revealed a marginal Game type × Relative game inclusion interaction-effect on threat vigilance, B= 0.03, SE= 0.01, t= 1.94, p= .062. Main effects of Game type B= -0.01, SE= 0.01, t= -0.91, p= .371, and Relative game inclusion B= -0.01, SE= 0.01, t= -0.15, p= .883 were not significant.

As expected, simple slope analyses showed that in the low control game, Relative game inclusion was negatively related to threat vigilance, B= -0.01, SE= 0.01, t= -2.14, p= .041, suggesting that the less participants were included in the low control game (the less ball tosses they received from the other players) the more vigilant they became for the threatening faces in the dot probe task. In the high control game, Relative game inclusion was not related to threat vigilance, B= 0.01, SE= 0.01, t= 1.03, p= .313. This means that in the condition in which participants could control their own inclusion in the game we found no evidence that lower game inclusion led to heightened threat vigilance; only in the condition in which participants could not control their own inclusion we found evidence that lower game inclusion led to heightened threatened vigilance. See Figure 5.1.

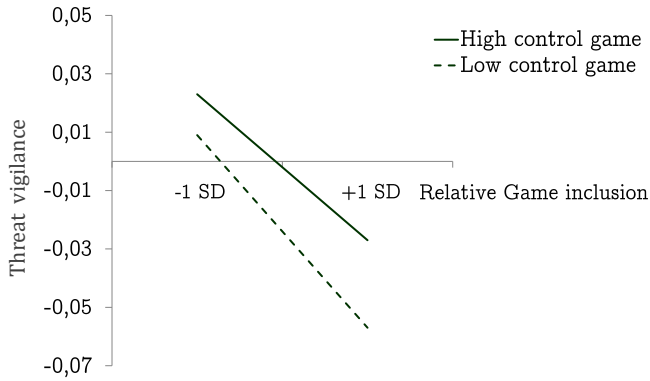

Figure 5.1: Among individuals with ASPD exclusion is only related to heightened threat vigilance if it occurs outside individuals' control (Experiment 7).

Normal population. The regression analyses for the normal population revealed, as expected, only a main effect of Relative game inclusion on threat vigilance, B= -0.03, SE= 0.02, t= -2.05, p= .049, suggesting that regardless of Game type, the less participants were included in the game (the less ball tosses they received or claimed from the other players) the more vigilant they became for the threatening faces in the dot probe task. As expected, the main effect of Game type, B=

0.02, SE= 0.02, t= 1.041, p= .304, and the Game type × Relative game inclusion interaction-effect, B= 0.01, SE= 0.03, t= 0.29, p= .774, on threat vigilance were not significant[6]. See Figure 5.2.

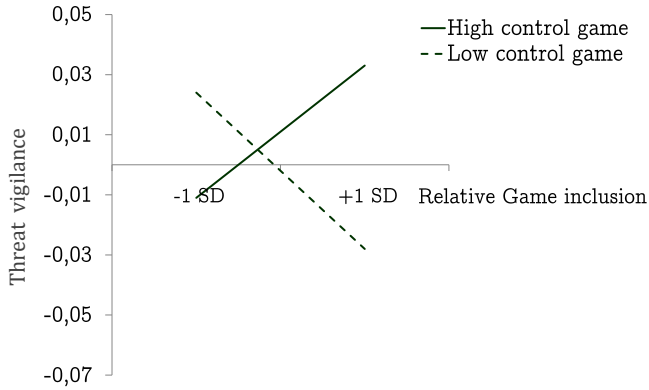

Figure 5.2: Among normal participants lower game inclusion is related to heightened threat vigilance regardless of control in the game (Experiment 7).

General Discussion

In the present chapter we tested whether exerting control over others would reduce the immediate impact of ostracism on threat vigilance among violent offenders with an antisocial personality disorder (ASPD). We conducted a Cyberball experiment (Williams & Jarvis, 2006) among clinically diagnosed criminal offenders with ASPD and normal individuals, who either received high control or low control over the players in the game before they were ostracized. Corroborating our hypotheses, results revealed that having control over players in the game prior to exclusion mitigated threat vigilance only among the ASPD population, but not among the normal population. As expected, normal individuals only responded to their level of inclusion in the game; the less they were included, the more vigilant they became for threat. In other words, when exposed to a Cyberball-induced experience of rejection, individuals with ASPD reacted similarly as normal individuals, but with one important exception: when ASPD patients experienced a sense of control over the other players before they were ostracised, they no longer showed increased threat vigilance. These results suggest that having control over others is more important for individuals with ASPD than it is for normal individ-

[6]In an overall analysis of both datasets combined, only the main effect of Relative game inclusion remained significant; the less participants were included in the game, the more threat vigilance they displayed.

uals. That normal individual did not benefit from the control experience as much as the individuals with ASPD, could perhaps be best interpreted in terms of the distinction between claiming inclusion and being granted inclusion. Our control manipulation was a form of social control. In the high control game participants essentially claimed their place in the game, while in the low control game participants had to be granted a place in the game. Recent research among a normal population shows that claiming inclusion is not as beneficial for basic need satisfaction as being granted inclusion (De Waal-Andrews & Van Beest, 2012). It is possible that individuals with ASPD are more used to claiming inclusion, and therefore benefit more from this than normal individuals.

We believe that our findings might be an interesting addition to Williams' model of ostracism (Williams, 2007a, 2007b). An important argument of this model is that immediate responses to ostracism are hard-wired and difficult to override by potentially mitigating factors. From a functional perspective this makes sense, because an immediate stress response to ostracism is necessary to maximally motivate reconnection behaviors (Bernstein et al., 2008). Our results show that, individuals who have a chronically high need for control are less affected by ostracism when they temporarily gain control. This means that they will probably be less motivated to rebuild connections with others. Ironically, reconnection is exactly what these individuals (should) need. We believe that the same mechanism could apply for other basic psychological needs that are thwarted by ostracism as well: self-esteem and meaningful-existence. For example, we would expect that an individual who suffers from extreme low self-esteem will be less affected by ostracism when he or she temporarily gains self-esteem, than somebody who does not suffer from extreme low self-esteem. In other words, an individual who craves the liking and approval of others is so concerned with his or her self-esteem that, if an opportunity to gain self-esteem arises, he or she will be less affected by ostracism. Whether our findings on control also extend to other needs is an interesting question that can be addressed in future research.

Our findings may be of interest to clinicians treating patients with ASPD. Patients with ASPD are known for their temper, especially in social situations. They are easily provocated by others and quickly revert to aggression (Walker, Thomas, & Allen, 2003). Possibly they over interpret provocations and rejection as threats to control. Even though reasserting control through aggression offers than the advantage of being less affected by ostracism, this decreases these individuals' chances to build lasting relationships with others. Asserting control over others at all cost fuels antagonistic responses from others and thus may not always be a solution to every problem. In therapy these individuals could learn that not every

criticism can be dealt with by asserting control, and that affiliating with others and working on one's self-esteem are beneficial alternatives.

Important to note is that our results on control needs among individuals with ASPD might be relevant for the ongoing debate on how ASPD should be classified. More specifically, the DSM-IV only describes behaviors that accompany the disorder, mainly violent, impulsive and selfish behavior. It does not mention possible underlying psychological mechanisms. To the extent that therapists might rely solely on this characterization of ASPD, by focusing for example only on reducing impulsivity, our results suggest that taking into account disordered control needs could be an important addition to the classification of ASPD and the treatment of individuals.

Strengths, limitations and future directions

A potential limitation of our study is that we only focused on implicit threat vigilance as a dependent variable. We did not assess social pain or its proxy, fundamental needs and mood. Future research could thus focus on these other measures to capture the immediate response to ostracism. We expect that for individuals with ASPD control will also mitigate these other, often called, reflexive measures (Williams, 2007a, 2007b).

Our paradigm enabled us to show that control is very important in the typology of ASPD. Future research could investigate whether disordered control needs are perhaps part of a psychological defense mechanism among patients with ASPD. Much like the narcissist's delusion of grandiosity, it may be the case that these patients delude themselves into thinking they will not feel hurt by rejection because they have power over others.

Finally, our findings on threat vigilance are interesting in itself, because implicit measures have been relatively scarce in ostracism research. Recently, some research is done on basic attentional processes in reaction to ostracism (Bernstein, Sacco, Brown, Young, & Claypool, 2010; Bernstein et al., 2008). Specifically, DeWall et al. (2009) did a study which shows that after an experience of ostracism individuals had an automatic preference for smiling over angry faces (i.e. a preference for acceptance cues). In our study we also focused on faces that were not associated with the rejection experience. Future research could also assess reactions to faces of the source of rejection. We would predict that, irrespective of whether the face is novel or belongs to the source, patients with ASPD would solely focus on angry faces but not on happy faces, as they are too concerned with regaining control and less with rebuilding reconnection.

Conclusion

This research is one of the first to complement literature on ASPD with experimental evidence that control is very important for individuals with ASPD. Possibly, individuals with ASPD interpret social exclusion mainly as a control breach. Ironically, this may further thwart their acceptance by others and their maintenance of meaningful relationships. After all, as unwanted as rejection may be from the individuals' perspective, rejection and reactions towards it have a functional character as well (Stormshak, Bierman, Bruschi, Dodge, & Coie, 1999; Brewer, 2005). It helps to correct dysfunctional and unwanted behaviors. The excessive control needs that individuals with ASPD have jeopardize this functional aspect of rejection. One could say that these individuals are trapped in a vicious circle in which their excessive control needs lead them to be rejected by society, which they try to solve by asserting even more control over others.

Acknowledgments

We would like to thank the Van Mesdag Clinic in Groningen (The Netherlands) for providing us with the opportunity to collect data among their patients. Specifically, we thank Marinus Spreen and Stefan Bogaerts for their helpful advice and comments on organizing the study at the clinic.

Chapter 6

General Discussion

The aim of this thesis was to demonstrate that the reason of a rejection – warmth or competence – has to be taken into account when investigating the responses to social rejection. I argued that being rejected is not a uniform experience, but depends on the distinct perceptions that people can have about the *reason* of why they were rejected. Based on the person perception literature I also argued that basic social motivations to exclude and reject others are related to interpersonal warmth and competence. I proposed to differentiate between rejections motivated by a perception of lack of warmth in the target and rejections motivated by a perception of lack of competence in the target. A series of studies were conducted in which warmth and competence based rejection was investigated. In these studies emotional reactions to being rejected were the main dependent variables. I reasoned that if competence and warmth rejections are indeed distinct forms of rejection, they should lead to distinct socially adaptive emotional reactions. This final chapter highlights the main outcomes of the studies and discusses the implications for theory concerning social rejection.

Overview of the study outcomes

The literature often reports an impact of rejection on both anger and sadness, and considers these emotions mainly as expressions of social pain. *Chapter 2* aimed to demonstrate that although rejection impacts these emotions, anger and sadness need not be impacted with the same intensity, because these emotions have distinct social functions, and their emergence might therefore depend on specific needs that people have. More specifically, this chapter investigated whether a rejection can cause different levels of sadness and anger, depending on individual differences in need for affiliation, as measured with sensitivity to others in interpersonal relationships. The results indicated that in response to a recent rejection experience, people with a high sensitivity to others' needs anticipated higher levels of sadness, and lower levels of anger in response to a series of hypothetical negative social scenarios, compared to their non-rejected counterparts, and compared to rejected participants with a low sensitivity to others. Moreover, among rejected individuals, sensitivity to others seemed positively associated with sadness and negatively associated with anger.

Next, *Chapter 3* investigated whether an ambiguous rejection can cause different levels of sadness and anger, depending on the subjective interpretations of the social motivations behind the rejection. It appeared that interpreting an ambiguous rejection as indicating a lack of competence predicted anger, whereas interpreting an unspecific rejection as indicating a lack of warmth predicted sad-

ness. Next, in a second study I investigated whether clearly communicating the motivation for the rejection – warmth or competence – impacted anger and sadness in the same manner as well. The same emotional response patterns emerged in response to clear and unambiguous warmth and competence rejections. In the final study of this chapter people were asked to *remember* their emotional and behavioural reactions to past competence and warmth rejections, and the same findings emerged again. Participants remembered that after a warmth rejection they felt more sad than angry; and they remembered that after a competence rejection, they felt more angry than sad. These findings show that although sadness and anger are both negative emotions that express social pain, their emergence crucially depends on the (subjective and objective) reason behind the rejection.

Then, *Chapter 4* again investigated sad and angry responses to rejection depending on warmth and competence motivations for the rejection, but this time in an actual *face-to-face* selection situation. During the selection, the selection criterion – warmth or competence – was clear to the selector, but was not verbally communicated to the targets of the selection. As observed by the targets of the selection, the results indicated that competence selections were conducted in a more dominant way than warmth selections, and warmth selections were conducted in a colder way than competence selections. The results also provided evidence for the specificity of sad and angry reactions to competence and warmth rejections. People who were rejected on warmth, experienced more sadness than anger. And people who were rejected on competence experienced more anger than people who were rejected on warmth. Together, these results suggest that rejected individuals are able to differentiate between competence and warmth rejections at the level of emotions, and at the level of the non-verbal behavior of the person who rejected them.

The last empirical chapter of this thesis, *Chapter 5*, investigated reactions to social rejection among an extreme group of individuals: violent offenders diagnosed with anti-social personality disorder (ASPD). The characteristics of this disorder suggest that these individuals might be especially controlling in their need to be respected as a competent individual. Using a computerized ball tossing game I investigated how giving these individuals the opportunity to exert social control over the other players in the game might impact their reaction to being excluded from the game, and compared this to individuals from a normal population without a known history of violence, or diagnosis of ASPD. Results showed that normal individuals became more vigilant for signs of social threat as they were more excluded in the game. This was regardless of whether they had the opportunity to exert control (or not) prior to the rejection experience. Individuals with ASPD on

the other hand, did not show this heightened threat vigilance in response to being excluded, when earlier in the game they had the opportunity to control the actions of the other players; they only showed the same response to the rejection when they did *not* have the opportunity to exert social control. These findings suggest that individuals with ASPD benefit from exerting control over others to such an extent that their normal stress response to rejection is temporarily blocked.

Warmth and competence matter for the experience of rejection

From the research that is described in this thesis it is evident that warmth and competence do matter for rejected individuals. This is because people respond with distinct emotions and behaviours depending on what they *thought* the reason was, and also depending on the objective the reason of the rejection. Second, these responses did not only emerge in controlled laboratory settings in which individuals were provided with (possible) reasons for the rejection, they were also suggested by autobiographical memory, and they emerged in natural group interactions in which the reason of the rejection was not verbalized, but instead conveyed non-verbally. Moreover, in the latter situation people also recognized the non-verbal cues of competence and warmth rejections. Together, these findings suggest that people are very sensitive to the distinction between warmth and competence based rejections. A more recent study confirmed that when people had to recall being rejected and name the reason, the reason was either a lack of warmth or a lack of competence (Çelik, Van Geffen, Van Beest, & Lammers, 2013).

From emotions to behavior

To show that warmth and competence are distinct social motivations for social rejection I relied mainly on the emotional consequences of these two types of rejection. Basically I employed anger and sadness as a tool in showing that competence and warmth rejections are fundamentally different. I built my argument around the functionalist assumption that sadness and anger reflect two distinct action tendencies (Frijda, 1987; Frijda et al., 1989). More specifically, in *Chapter 2* I speculated that sadness is a strategy that is aimed at being granted inclusion based on obtaining trust and liking, whereas anger is a strategy that is aimed at claiming inclusion. And related to this in *Chapter 3* I argued that sadness is especially functional when one is motivated to repair one's social image as a loving and caring individual, while anger is especially functional when one is motivated is to repair one's social image as a respectable and competent individual. A straightforward question that comes to mind is whether these action tendencies always

lead to their concurrent behavioural outcomes. More specifically, does sadness in response to social rejection always lead to actually engaging in behaviour that is aimed at attaining love, care and trust–thus to affiliatory behaviour? And does anger in response to rejection always lead to engaging in behaviour that is aimed at attaining respect for being competent – thus to self-enhancing behaviour?

Many studies in social rejection literature failed to find mediation by emotions in the link between rejection and behavioural outcomes (Buckley et al., 2004; Twenge et al., 2001, 2003). Perhaps, another way to look at the function of emotions in response to rejection (but maybe also in general) is that they serve an informational purpose eliciting certain action tendencies, but that they do not necessarily lead to specific behaviours (Van Kleef et al., 2010). In other words, emotions might be experiential states that inform individuals about possible challenges, opportunities, threats, and rewards in their social environment. This means that there need not always be a direct link between emotions and behaviours (see also, Roseman, Wiest, & Swartz, 1994). In this sense, in *Chapter 4*, I treated emotional responses to rejection and the ability to recognize non-verbal behaviour as equivalent indicators of the same process: whether rejected individuals were able to process the information that was out there.

Nonetheless, it would be interesting to investigate more in depth whether competence and warmth rejections lead to distinct behaviors, and whether these behaviors are predicted by specific emotions. In Experiment 4 (*Chapter 3*) I attempted to test whether being rejected for lacking warmth was related to engaging in affiliatory behaviour more strongly than in self-enhancing behaviour, and whether being rejected for lacking competence was related to engaging in self-enhancing behaviour more strongly than in affiliatory behaviour. The results did not provide evidence for such a relationship. This could have been due to the fact that participants had to recall from memory how they had behaved following the rejection. In a more recent study we investigated actual social behavior after a warmth and competence rejection (Çelik, Van Ginneken, Van Beest, & Lammers, 2013). We used the same paradigm as in Experiment 3 (participants were either rejected because of lack of warmth, or competence, or were included), and assessed their behavior in an altruistic punishment and compensation game game (Lelieveld et al., 2012). In our version of the game participants observed person A (the 'dictator') dividing a certain amount of chips between himself and person B (the receiver). The dictator always made an unfair division, taking more chips for himself. The participant also had an amount of chips and could use these chips to either punish the dictator, or compensate the victim. For each chip that the participant put in 3 chips were taken away from the dictator (punish), or 3 chips were given to the

receiver (compensate). The results suggested that after a competence rejection people were more likely to punish the dictator, but after a warmth rejection they were more likely to compensate the receiver. Note that both punishing the dictator, and compensating the receiver can be seen as altruistic behaviors, because participants could have also chosen to do nothing and keep their chips. However, punishing the dictator is a demonstration of one's power and targets the cause of the injustice, while compensating the receiver is a demonstration of empathy. These findings suggest that depending on the reason of the rejection people do engage in specific behaviors that are aimed at repairing the specific damage that was caused by the rejection. More research is needed to investigate what exactly the role of emotions is in the link between rejection and distinct behavioural outcomes.

When are responses to rejection not adaptive?

In Chapters 2 to 4 the emotional responses to warmth and competence rejections made sense from a functional perspective. Moreover, the ability to correctly recognize dominance and coldness in competence and warmth rejections in very short interactions suggests that people are highly tuned into understanding how they are being evaluated by others. It seems plausible that emotional responses that match the reason of the rejection, and the ability to recognize the specific non-verbal cues of competence and warmth rejections, improve one's chances to be (re)included. Most findings in this thesis suggest that the basic perceptual response to social rejection is adaptive. But other findings in this thesis also suggest non-adaptive responses to rejection. First, the directness of the rejection might be a factor in contributing to non-adaptive responses. Comparing the results of Experiment 5 (direct rejection manipulation) and 6 (indirect rejection manipulation) suggests that when a rejection is overly personal and direct, this is so overwhelming that it seems to hamper functional responding to the rejection. More specifically, participants in Experiment 5 did not show the expected emotion patterns as in the studies in Chapter 3, and Experiment 6, and they also saw equal levels of dominance in competence and warmth selectors. These findings suggest that when a rejection is too much *in-your-face*, people might not be able to adaptively respond to rejection anymore. This idea is in line with previous findings in the rejection literature and specifically with Ostracism theory (Williams, 2001). Nevertheless, this conclusion has to be taken with caution as I found no moderation by the directness of the rejection; although indirect rejection was perceived as less negative than the direct rejection, the directness of the rejection statistically did not moderate the specific pattern of the emotional reactions to the rejection, and also not

rejection individuals ability to recognize dominance and coldness in the selector.

Second, certain personality traits could also cause non-adaptive responding to rejection. In *Chapter 5* I tested responses to ostracism among violent offenders with antisocial personality disorder (ASPD). These individuals are relatively insensitive to others' needs and wishes, and are controlling in their need to be respected as a competent individual. Because of their incapacity or unwillingness to build relationships based on love and warmth, I reasoned that these individuals should rely more on acquiring control to satiate their belongingness needs. I expected that because of their disproportionate high need for control, individuals with ASPD would feel less threatened by ostracism when they have the opportunity to exert control over others. The results indicated that individuals with ASPD can be threatened by ostracism the way normal individuals do. But when they receive an extra satiation of their control needs (i.e. a buffer) – they appear to be less threatened by ostracism than normal individuals. Possibly, these individuals are in a vicious circle of controlling others by claiming their place in social groups and relationships, then getting rejected for their unadaptive behavior, and as a response reverting to even exerting more control.

Finally, although it was beyond the scope of the present thesis, I expect that competence and warmth rejection can also elicit perceptions of threat to such an extent, that the anger that is elicited by a competence rejection can turn into its non-adaptive counterpart of aggression, and the sadness that is elicited by a warmth rejection can turn into its non-adaptive counterpart of helplessness and depression. Stated differently, I would expect that anger and sadness are more likely to result in adaptive responding (i.e. resulting in reinclusion), when the individual sees also a challenge in the rejection, and not only a threat. I believe that this might depend on specific aspects of the rejection concerning its unfairness, unexpectedness and chronicity. According to the biopsychosocial model of self-regulation (Blascovich, Seery, Mugridge, Norris, & Weisbuch, 2004; Blascovich & Tomaka, 1996) motivational states of threat and challenges are the result of evaluating a certain event in terms of its *demands* (e.g., required effort, danger, uncertainty) and whether the person possesses the *resources* to deal with these demands (e.g., skills, support, dispositions). According to the model a threat motivational state emerges when demands outweigh resources, whereas a challenge motivational state emerges when resources approach or exceed the demands. Thus to understand adaptive and unadaptive behaviors in response to rejection I believe we need to develop more elaborate models that not only incorporate warmth and competence and differences in personality, but also the specific characteristics of the rejection episode in terms of demands and resources.

Relationship with the *Needs threat model*

According to the *Needs threat model* (Williams, 2009) the experience of social rejection and ostracism threatens four psychological needs – the need to belong, meaningful existence and self-esteem and control. A rejection experience often leaves people feeling worthless, that life has lost purpose and meaning, and devoid of control. The studies in this dissertation suggest that being rejected at least leads to two distinct psychological experiences: the experience that one is not loved, liked and trusted, and the experience that one is not respected. How do the four fundamental psychological needs described in the needs threat model relate to the warmth-competence distinction that I put forward in this dissertation and what are theoretical implications?

According to Williams (2009) the need to belong and need for self-esteem form a cluster together, and the need for control and meaningful existence also form a cluster. One way to link the warmth-competence distinction to this model is by proposing that threats to belongingness and self-esteem are essentially threats to one's warmth, while threats to control and meaningful existence are essentially threats to one's competence. Belongingness and self-esteem are indeed closely related to social relationships between people (Baumeister & Leary, 1995), while control and meaningful-existence are perhaps less related to social relationship and more closely related to competence. But I believe that it makes more sense that all four needs that are described in the needs threat model have warmth and competence aspects in them. Thus people can loose their sense of belongingness, self-esteem, control and meaningful existence, because they were withheld love and trust due to perceptions of lack of warmth, but also because they were withheld respect due to perceptions of lack of competence.

The reasoning above raises the question what the social nature of the need for control is. The needs threat model does not explicitly describe this. It merely describes that when people feel thwarted in their need for control because of a rejection, they become aggressive. But what exactly is the purpose of these acts of aggression? If it is to obtain control, then control over what exactly? I would like to put forward the idea that these acts of control through aggression may be reflections of *claiming* inclusion; thus using force to obtain love and/or respect. Thus the social nature of control is basically control over one's inclusionary status. The implication is that – if we may assume that claiming love and respect is probably more successfully accomplished with force and anger, than with sadness – sometimes warmth rejections can also trigger mainly anger. This should be especially the case among individuals with a controlling nature, thus among

individuals who prefer to claim inclusion. This idea fits nicely with the studies in *Chapter 5* in which individuals were given the option to control the course of a game of Cyberball. The control manipulation in these studies is essentially giving people the option to claim their place in the game. Recall, that these studies demonstrated that individuals diagnosed with ASPD benefitted much more from claiming inclusion than normal individuals. Probably this was the case because they prefer claiming inclusion, while normal individuals usually prefer inclusion to be granted to them willingly (see also, De Waal-Andrews & Van Beest, 2012).

Previously I argued that warmth rejections should primarily lead to sadness, and competence rejections should primarily lead to anger. The studies in this thesis indeed support this idea. However, the above reasoning suggests that some personality types might be more prone to claiming inclusion. The consequence of this could be that among these individuals even warmth rejections could elicit primarily anger instead of sadness. This is an interesting venue for future research.

Conclusion

In conclusion, the studies presented in this thesis demonstrate that distinguishing between different reasons for rejection is important as it may bring us closer to understanding why people respond to rejection the way they do. Rejection is part of life; it communicates social norms and values, and people have an array of coping mechanisms to deal with it. It seems that the two most reported emotions in response to social rejection – anger and sadness – may be in fact directly related to the values that a rejection conveys.

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English Summary

The experience of being rejected is painful. Several studies have already shown this. However, there are no studies that distinguish between different forms of rejection. The focus of interest in existing rejection studies is mainly on the 'pure' effect of a general and unspecific experience of rejection. In *Chapter 1* I propose that the experience of being rejected might not be a uniform experience, but varies with the distinct perceptions that people can have about the reason of why they are rejected. I rely on the existing knowledge that people judge each other on warmth and competence to shed light on the distinct experiences people can have of being rejected. More specifically, I argue to distinguish between rejections motivated by a perception of lack of warmth and rejections motivated by a perception of lack of competence in the target. I then introduce a series of studies in which angry and sad reactions to being rejected are the main dependent variables. My aim was to show that targets of a rejection recognize warmth and competence rejections as different types of rejection and respond to them in emotionally distinct ways. Below I give a summary per chapter.

The aim of *Chapter 2* was to show that anger and sadness are differentially impacted by an experience of social rejection. More specifically, I investigated whether an unspecific rejection manipulation (a rejection without a reason) can cause different levels of sadness and anger, depending on individual differences in need for affiliation as measured with sensitivity to others. I reasoned that if the regulation of sadness and anger in response to rejection is associated with sensitivity to others (SO), this is an indication that anger and sadness are not just pain signals, but have a distinct a social function in the context of social rejection. Participants were led to believe that they were paired with another (non-existing) participant that they would meet later. After an exchange of personal messages with their partner, participants in the rejection condition learned that their partner no longer wanted to meet them. Participants in the control condition learned that their partner had to leave due to an unexpected phone call. Dependent variables were anticipated sadness and anger in response to several hypothetical

negative social scenario's. The results showed that rejected participants with high SO, anticipated higher levels of sadness and lower levels of anger in response to the negative social scenario's, compared to their non-rejected counterparts, and compared to rejected participants with low SO. Moreover, among rejected participants SO was positively associated with sadness, and negatively associated with anger. These results imply that anger and sadness are indeed differentially impacted by rejection, and that these emotions might be useful to demonstrate the distinction between competence- and warmth-rejections as well.

The aim of *Chapter 3* was to show that people respond with different emotions to warmth- and competence-rejections. The first study assessed participants' subjective interpretations of the reason behind an ambiguous rejection. I assessed whether participants interpreted this rejection in terms of warmth and competence. I expected that interpretations of a warmth reason would predict sadness, whereas interpretations of a competence reason would predict anger, in response to the rejection. To suggest a reason for the rejection, just before the rejection manipulation took place, the participant and confederate exchanged a written personal evaluation about each other's personality regarding one's competence and warmth traits. Participants received a previously prepared evaluation which suggested that a rejection on either trait could be possible. I then assessed how participants interpreted this ambiguous information. The results indicated that the more participants thought they were rejected because of lack of competence, the angrier they were, whereas the more they thought they were rejected because of lack of warmth, the sadder they were. In the second study participants were either rejected on competence, or on warmth, or accepted. This time rejected participants received negative evaluations either on their competence, or on their warmth, while included participants received positive evaluations on all traits. The results indicated that a rejection due to lack of competence leads to anger (and less to sadness); while a rejection due to lack of warmth leads to sadness (and less to anger). Next, the third study investigated how people remember their emotional reactions to past competence and warmth rejections. Participants were asked to write about a personal experience of rejection that was due to lack of competence, or due to lack of warmth. The results replicated the previous study. These studies show that the experience of rejection depends on the reason of the rejection.

Chapter 4 investigated whether people also differentiate between warmth- and competence-rejections in a setting in which there is no explicit information about the reason of the rejection. I attempted to simulate real life in which people often have their private reasons for ignoring or rejecting someone, and targets have no information other than the non-verbal behaviour of the person who engages in

the rejection. Thus the reason of the rejection was unclear from the perspective of the targets, yet it was clear from the perspective of the selector. Selectors were real participants who were privately instructed to either make a selection based on competence, or based on warmth. I assessed targets' emotional reactions to the rejection, and whether they were able to pick up the non-verbal cues of competence and warmth judgments – respectively dominance and coldness – from the behaviour of the selector. I expected that selectors who based their decision on the targets' competence would exhibit stronger displays of dominance than selectors who based their decision on warmth. Conversely, I expected that selectors who based their decision on the targets' warmth would exhibit stronger displays of coldness than selectors who based their decision on the targets' competence. The results provided again evidence for the specificity of angry and sad reactions to competence and warmth rejections. Moreover, targets of the rejection were also able to differentiate between competence and warmth rejection on the level of nonverbal behavior of the selector. Both included and excluded targets assigned higher dominance to competence selectors than to warmth selectors, and higher coldness to warmth selectors than to competence selectors. Together these results suggest that people can differentiate between competence- and warmth-rejections even when the reason is only conveyed non-verbally.

In *Chapter 5*, the focus was not on the distinction between competence and warmth anymore, but on a specific population of individuals: violent offenders with antisocial personality disorder (ASPD). The aim was to show that among these individuals an experience of interpersonal control would lead a dysfunctional response to rejection. I investigated whether exerting control over the actions of others could break down the stress response to rejection. Participants played a digital game of ball toss with three others. Some participants had the opportunity to determine the course of the game and the actions of the players. Other participants did not have this opportunity. Then, in a second round of the game all participants were ostracized by the other players and excluded from the game. The dependent variable was social threat vigilance. Results showed that normal individuals became more vigilant for signs of social threat as they were more excluded from the game. This happened irrespective of whether they had experienced control prior to the rejection or not. But as expected, ASPD'ers only showed the same threat vigilance when they had previously not exerted control over the other players. The one's who experienced control prior to the rejection did not show vigilance to social threat. These results suggest that ASPD'ers place so much importance on having control that they become insensitive to rejection when they experience control.

Finally, in *Chapter 6*, I conclude that people are very sensitive to warmth and competence in a context of social rejection. I also discuss implications for existing insights and questions in the literature. More specifically, I discuss the role of emotions in behavioral responses to social rejection; when responses to social rejection are not adaptive; and how the warmth-competence model could be related to the existing needs-threat model.

Nederlandse Samenvatting

De ervaring van afgewezen worden is pijnlijk. Verschillende studies hebben dit inmiddels laten zien. In deze studies wordt echter nooit onderscheid gemaakt tussen verschillende vormen van afwijzing. Men is vaak geïnteresseerd in het 'pure' effect van een algemene en niet-specifieke afwijzing. In *Hoofdstuk 1* beschrijf ik dat de wijze waarop mensen afwijzing ervaren waarschijnlijk geen uniforme ervaring is, maar bepaald wordt door de reden die mensen aan een afwijzing toeschrijven. Ik maak gebruik van het inzicht dat mensen elkaar beoordelen op competentie en warmte en pas dit inzicht toe om de ervaring van exclusie beter te begrijpen. Ik maak een onderscheid tussen twee vormen van afwijzing: afwijzing gemotiveerd door de perceptie van gebrek aan competentie, en afwijzing gemotiveerd door de perceptie van gebrek aan warmte. Ik stel vervolgens een aantal studies voor waarin boosheid en verdriet de belangrijkste afhankelijke maten zijn. Mijn doel is om te laten zien dat mensen het onderscheid tussen competentie- en warmte-afwijzingen herkennen en er met specifieke emoties op reageren. Hieronder geef ik per hoofdstuk een samenvatting.

Het doel van *Hoofdstuk 2* was om te laten zien dat boosheid en verdriet verschillend worden beïnvloedt door de ervaring van afwijzing. Ik onderzocht of een afwijzing zonder reden verschillende maten van boosheid en verdriet teweeg kan brengen, afhankelijk van individuele verschillen in relatiestijl. Als de regulatie van boosheid en verdriet na afwijzing afhangt van relatiestijl, kan dit gezien worden als een indicatie dat deze emoties waarschijnlijk een sociale functie hebben in de context van de afwijzing. Proefpersonen werd verteld dat ze gekoppeld waren aan een andere proefpersoon die ze later zouden ontmoeten (in werkelijkheid bestond deze andere persoon niet). Na een uitwisseling van een persoonlijk bericht met hun 'partner', kregen proefpersonen in de exclusie-conditie te horen dat deze persoon hen niet meer wilde ontmoeten. Proefpersonen in de inclusie-conditie kregen te horen dat hun partner onverwacht het onderzoek moest verlaten vanwege een telefoontje. Afhankelijke maten waren geanticipeerde boosheid en verdriet in respons op verschillende negatieve sociale scenario's. De resultaten lieten zien dat onder de

mensen met een hoge sensitiviteit voor anderen, de afgewezen proefpersonen meer verdriet en minder boosheid anticipeerden in respons op de negatieve scenario's, vergeleken met de niet afgewezen proefpersonen, en vergeleken met afgewezen proefpersonen met een lage sensitivititeit voor anderen. Bovendien bleek sensitiviteit voor anderen onder afgewezen proefpersonen positief samen te hangen met verdriet en negatief samen te hangen met boosheid. Deze studie laat zien dat verdriet en boosheid inderdaad verschillend kunnen worden beïnvloed door een afwijzing.

Het doel van *Hoofdstuk 3* was om te laten zien dat mensen met verschillende emoties reageren op warmte- en competentie-afwijzingen. De eerste studie onderzocht hoe mensen een ambigue afwijzing interpreteren; namelijk of ze de afwijzing interpreteren als teken dat men een gebrek aan competentie heeft, of dat ze de afwijzing interpreteren als teken dat men een gebrek aan warmte heeft. Ik verwachtte dat de interpretatie van een gebrek aan warmte verdriet zou voorspellen, terwijl de interpretatie van een gebrek aan competentie boosheid zou voorspellen. Ook in deze studie werden proefpersonen gekoppeld aan een andere persoon. Om de indruk te wekken dat de afwijzing een reden had, ontvingen proefpersonen vó'ó'r de exclusie-manipulatie eerst een persoonlijke evaluatie over hun warmte en competentie van hun 'partner'. In werkelijkheid kreeg iedereen dezelfde evaluatie te zien. Deze evaluatie suggereerde dat de afwijzing zowel zou kunnen liggen aan een lage beoordeling van competentie, als aan een lage beoordeling van warmte. De resultaten lieten zien dat hoe sterker proefpersonen dachten dat ze waren afgewezen vanwege gebrek aan competentie, hoe bozer ze werden, en hoe sterker ze dachten dat ze waren afgewezen vawege gebrek aan warmte, hoe verdrietiger ze werden. In de tweede studie werden proefpersonen of afgewezen vanwege een gebrek aan competentie, of afgewezen vanwege een gebrek aan warmte, of ze werden niet afgewezen. Dus deze keer ontvingen afgewezen proefpersonen een heldere negatieve evaluatie van hun competentie, of van hun warmte. Niet afgewezen proefpersonen ontvingen positive evaluaties van hun competentie en warmte. De resultaten lieten zien dat een competentie-afwijzing voornamelijk tot boosheid leidt en minder tot verdriet, terwijl een warmte-afwijzing voornamelijk tot verdriet leidt en minder tot boosheid. Hierna onderzocht de derde studie hoe mensen zich herinneren dat ze hebben gereageerd op eerdere ervaringen van competentie- en warmte-afwijzingen. De mensen die zich een warmte-afwijzing moesten herinneren gaven aan meer verdriet dan boosheid te hebben gevoeld, terwijl de mensen die zich een competentie-afwijzing moesten herinneren aangaven meer boosheid dan verdriet te hebben gevoel. Deze studies laten zien dat de ervaring van afwijzing afhangt van de reden van de afwijzing.

Hoofdstuk 4 had als doel om te onderzoeken of mensen het onderscheid tussen warmte- en competentie-afwijzingen ook herkennen in een setting waarin geen expliciete informatie beschikbaar is over de reden van de afwijzing. Mijn doel was om het dagelijkse leven te simuleren waarin mensen vaak hun eigen redenen hebben om iemand af te wijzen of te negeren, en de afgewezen persoon geen expliciete informatie heeft over de reden van de afwijzing. In dit soort situaties kan de afgewezen persoon alleen afgaan op het non-verbale gedrag van de afwijzer. In twee studies werd afwijzing geïnduceerd in het kader van een selectie. De reden van de afwijzing was onduidelijk voor de targets van de selectie, maar voor degene die de selectie maakte – de selector – was de reden wel helder. De selectie vond plaatst middels een face-to-face procedure zonder verbale communicatie. De selectors waren proefpersonen (en geen acteurs) en werden vooraf geïnstrueerd om hun keuze te baseren op hun eigen inschatting van de competentie of warmte van de targets. Targets waren niet op de hoogte van deze instructies. Ik onderzocht opnieuw de emotionele reacties van de targets op de selectie, en onderzocht ook of ze in staat waren het non-verbale gedrag van de selector te herkennen. Ik verwachtte dat selectors die hun keuze moesten baseren op de competentie van de targets zich dominanter zouden opstellen tijdens de selectie, dan selectors die hun keuze moesten baseren op de warmte van de targets. Ook verwachtte ik dat selectors die hun keuze moesten baseren op de warmte van de targets zich kouder zouden opstellen dan selectors die hun keuze moesten baseren op de competentie van targets. De resultaten ondersteunden de eerdere bevindingen wat betreft specifieke emotionele reacties in respons op competentie- en warmte-afwijzingen. Bovendien, bleken targets van de selectie ook te kunnen differentiëren tussen competentie- en warmte-afwijzingen op basis van het vertoonde non-verbale gedrag van de selector. Zowel de geïncludeerde als de geëxcludeerde targets schreven meer dominantie toe aan competentie-selectors dan aan warmte-selectors. Ook werd aan warmte-selectors meer koudheid toegeschreven dan aan competentie-selectors. Deze resultaten suggereren dat mensen in staat zijn om het onderscheid tussen een warmte- en competentie-afwijzing waar te kunnen nemen, ook wanneer de reden van de afwijzing alleen non-verbaal wordt gecommuniceerd.

In *Hoofdstuk 5* lag de focus niet meer op het onderscheid tussen competentie- en warmte-afwijzingen, maar lag deze op een specifieke populatie: geweldadige delinquenten met een anti-sociale persoonlijkheidsstoornis. Het doel was om te laten zien dat onder deze mensen een ervaring van interpersoonlijke controle leidt tot een dysfunctionele reactie op afwijzing. Ik heb onderzocht of het uitoefenen van controle over het gedrag van anderen de stress-respons op afwijzing te niet kan doen. Proefpersonen speelden een digitaal bal-overgooi-spel met drie anderen.

Een deel van de proefpersonen kreeg hierbij de mogelijkheid om het verloop van het spel en de acties van de andere spelers zelf te bepalen. Een ander deel van de proefpersonen kreeg deze mogelijkheid niet. In een tweede ronde van het spel werden proefpersonen vervolgens genegeerd door de andere spelers en op die manier buitengesloten van het spel. De afhankelijke variabele was de alertheid op sociale dreiging. De resultaten lieten zien dat proefpersonen uit de normale populatie alerter werden voor sociale dreiging naarmate ze minder in het spel werden betrokken, ongeacht of ze eerder in het spel controle hadden over de spelers, of niet. Echter, proefpersonen met ASPD, vertoonden deze reactie alleen als ze geen controle ervoeren over de andere spelers; wanneer zij eerder in het spel controle hadden over de spelers, vertoonden zij geen alertheid meer voor sociale dreiging. Deze resultaten suggereren dat mensen met een anti-sociale persoonlijkheidsstoornis controle dusdanig belangrijk vinden dat ze ongevoelig worden voor afwijzing wanneer ze controle ervaren.

In *Hoofdstuk 6*, tenslotte, concludeer ik dat mensen heel gevoelig zijn voor het onderscheid tussen competentie en warmte in de context van afwijzing. Ook bediscussieer ik de implicaties voor bestaande inzichten en vraagstukken in de literatuur. Meer specifiek, bespreek ik de rol van emoties in het tot stand komen van gedragsmatige reacties op afwijzing; wanneer reacties op afwijzing niet adaptief zijn; en hoe het warmte-competentie-model gerelateerd zou kunnen worden aan het reeds bestaande *Needs threat model* van afwijzing.

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Jan en Lavrans, beiden supergetalenteerd. Ik zal me nooit aan jullie kunnen

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